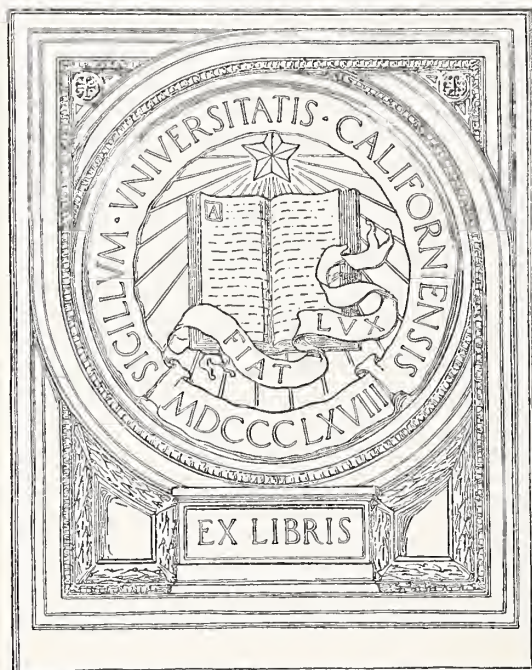
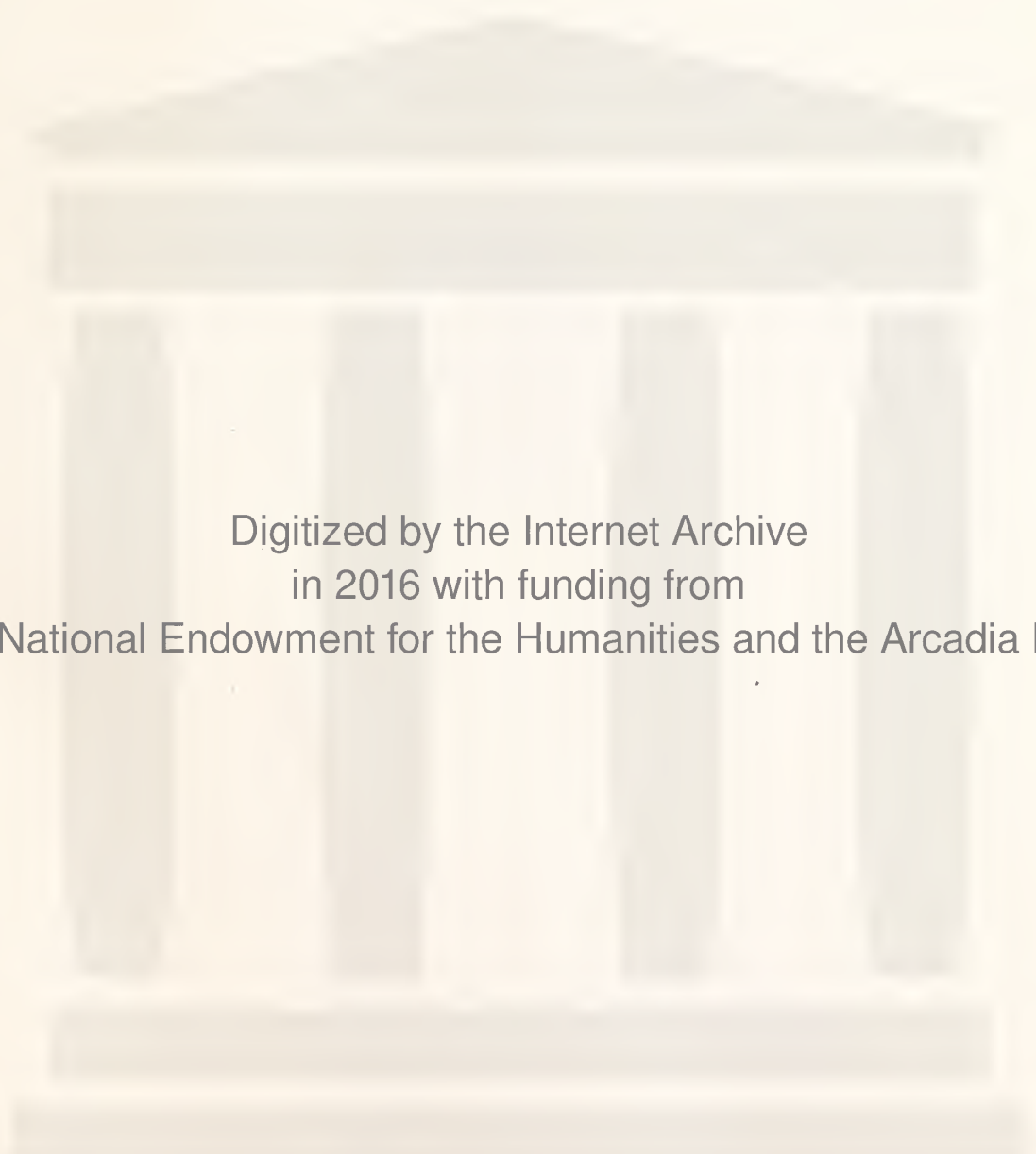


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SURGICAL ASPECTS OF THYROID DISEASE*

EDWARD S. JUDD, JR., M. D., Surgeon, Mayo Clinic, Rochester, Minnesota

The presence of a goiter formerly served as a challenge to the surgeon, although the metabolic aspects of the condition remained somewhat obscure. The simple, colloid goiter, and frequently the adenomatous goiter, were removed with ever increasing dexterity and improvement in results. Earlier surgeons became masters of anatomic details and developed techniques which the modern surgeons would do well to scrutinize critically. Before long it became apparent that the simple, disfiguring colloid goiter was a vastly different lesion from that found in the somewhat smaller, hyperplastic, hyperfunctioning gland now known in many centers as an "exophthalmic goiter." The old masters of surgical techniques learned to divide their operations for toxic goiter into multiple stages. They proceeded from polar ligation to partial resection of one lobe of the thyroid gland, which finally was followed by partial removal of the second lobe. The way was difficult, and fraught with disappointments and emotional and financial tragedy for certain patients. However, all who observed these patients came to hold in highest regard the phenomenon of hyperthyroidism.

Toxic Goiter

Following the lead of the late Dr. H. S. Plummer and others who reintroduced the idea of preparing patients with iodine, the surgeons became bolder in their attack, although at first the incidence of the so-

called thyroid storm or crisis remained rather high. For some years then a properly performed, anatomically correct, radical subtotal thyroidectomy was a standard procedure, and the treatment of choice for toxic goiter.

In relatively recent times, physicians have developed agents which bid fair to reduce sharply the necessity for surgical intervention, if not to render it completely obsolete. Within the past decade, the goitrogens or "antithyroid drugs" have been investigated thoroughly. There now is enough evidence to permit one to draw certain conclusions regarding these drugs.¹ In the past five years, radioiodine has become available for clinical use. Although the exact effect of this radioisotope is far less certain and considerably more obscure than that of ordinary iodine, certain tentative deductions can be drawn.² The surgeon who is interested in the proper therapy of goiter, whether hyperthyroidism exists concomitantly or not, will do well to be thoroughly familiar with other (perhaps less dramatic or even less drastic) agents, which might suffice. In many instances the surgeon would be only too happy to have at his disposal an agent which was not only thoroughly effective, but what is equally important, permanently effective and safe.

Hyperthyroidism in Exophthalmic Goiter

After the ultimate development of subtotal thyroidectomy performed in one stage, conscientious surgeons admitted freely that there were certain disad-

* Presented at the 97th Annual Session of the Maine Medical Association, 1951.

vantages in this type of treatment. Even the most cautious surgeon found that unilateral paralysis of the vocal cords occurred in about 1 per cent of cases in which this operation was performed. In addition, he was distressed to find that as the patients were studied longer and longer after the operation, he could not escape the fact that at least 5 per cent of them sooner or later experienced a definite recurrence of the disease. In addition, removal or injury of the parathyroid glands, such as crushing of the glands or destruction of their blood supply, resulted in permanent tetany in perhaps 1 per cent of the cases. These disappointments were coupled with mortality figures which, although never high in the modern era, certainly were high enough to lead the conscientious surgeon and internist alike to select the patients for this operation with the utmost caution. Myxedema was not a complication of immediate concern, but the surgeon found that in a small percentage of cases this condition did actually appear and persist.³ It was with these facts in mind that considerable attention was focused recently upon the antithyroid drugs or goitrogens. It is now known that the use of even the most refined form of these drugs as the sole definitive therapeutic agent, has proved disappointing in cases of exophthalmic goiter.^{4, 5}

The reaction to the drugs has been reduced to a low level, but it still should be kept in mind. The prolonged period essential to control the hyperthyroidism, which requires the patients to report periodically for the determination of the metabolic rate and for the making of blood counts over a long period of time, has made the patients tired of the program and its attendant expense. It is common experience to note that the results of treatment with these drugs are unsatisfactory in 50 per cent of cases, and that the patients are more than distressed to learn that they must undergo an operation anyway after a year or more of rather complicated therapy.^{4, 5}

In regard to radioiodine, it may be said that administration of this radioisotope may some day be the treatment of choice in all cases of exophthalmic goiter. At the present time we are pursuing a cautious course at the Mayo Clinic. It is known that this drug may have a profound effect on other endocrine glands. There is no way to establish a correct dose except by the estimation of the weight of the goiter, which is a notoriously inaccurate method. It has been learned that in certain cases the goiter has failed to respond even after the administration of multiple doses of this radioisotope, and the patients have been forced to undergo surgical treatment. It has been demonstrated that myxedema will develop in a certain percentage of cases. By far the greatest worry at present, however, is the risk of carcinogenesis. I do not know of any reported case in which carcinoma of the thyroid gland or any other structure has followed

the administration of radioiodine. In the early days of radiotherapy, cancer of the skin frequently developed in cases in which radium or roentgen rays were applied without due regard to safe dosage. Time alone will tell whether radioiodine has carcinogenic properties.

At the Mayo Clinic, our present policy regarding the administration of radioiodine in cases of exophthalmic goiter is as follows. It is used instead of thyroidectomy in cases in which the patients are elderly persons (60 to 65 years of age). In such cases, the life expectancy ordinarily is not very long. It also is administered in cases in which the patients are younger persons who are poor operative risks because of the presence of complication such as severe cardiac disease. It occasionally is administered in cases in which young patients previously have undergone thyroidectomy several times and have returned to the clinic because of a recurrent goiter, and in cases in which tetany, fixation of a vocal cord, or a similar situation exists to stay the hand of the surgeon.

In all other cases of exophthalmic goiter, subtotal thyroidectomy is performed after the patients have been prepared by the administration of strong solution of iodine. In the few cases in which the hyperthyroidism cannot be controlled by strong solution of iodine, propylthiouracil is administered. When this preparation is administered, it is necessary to delay operation for a considerable time. For this reason, it has not proved practical in our practice. We have not found it necessary to administer this drug in more than 10 or 15 per cent of cases.

We are still using the standard, one-stage, subtotal thyroidectomy, and the results of this procedure have been entirely satisfactory in our hands.⁶ In the past six years, there has not been any mortality in cases in which operation for exophthalmic goiter has been performed at the clinic.

Adenomatous Goiter With Hyperthyroidism

In cases in which hyperthyroidism is associated with adenomatous goiter, the situation is different from that in cases of hyperthyroidism associated with exophthalmic goiter. In cases of adenomatous goiter, the patients are much older than patients who have exophthalmic goiter, and a nodular goiter has been present for several years. The patients finally seek medical consultation because of cardiac failure, or because cardiac fibrillation has become so severe that they no longer can carry on their usual activities. Since the onset of the hyperthyroidism is insidious, the symptoms resulting from secondary involvement of the heart may be very severe. This is all the more distressing when one realizes that, no matter what agent is employed for pre-operative preparation, the result usually is less satisfactory than that obtained in cases of exophthalmic goiter.

The improvements that have been made in diagnostic aids and pre-operative and post-operative adjuncts in recent years, have been so helpful that at the present time the mortality rate associated with thyroidectomy is extremely low.⁶ This is the quickest and most effective treatment, and it is particularly indicated in cases in which the patients have some other lesion which demands surgical treatment. It is not uncommon to encounter a malignant tumor or some other lesion which requires immediate surgical treatment in a case in which hyperthyroidism is associated with adenomatous goiter. Surgical removal of the nodular goiter will control the hyperthyroidism and thus permit treatment of the more serious lesion. The hyperthyroidism associated with an adenomatous goiter can be controlled more satisfactorily by surgical treatment than can the hyperthyroidism associated with exophthalmic goiter. If subtotal thyroidectomy has been performed properly, an adenomatous goiter seldom will recur. In addition to the presence of hyperthyroidism or the possibility of its development, there are other indications for the removal of a nodular goiter. It is now well established that carcinoma can develop in (or be coincidentally present within) an adenomatous goiter. For this reason, a nodular goiter should not be treated by medical means. There may be some argument about whether the hyperthyroidism reduces the chances of the development of carcinoma, but all observers agree that the two conditions may occur concomitantly.⁷

Adenomatous Goiter Without Hyperthyroidism

For some years, many family physicians were in the habit of telling the patient, "If your goiter does not bother you, do not bother it." It has been learned that this concept is completely erroneous. Almost every day surgeons are called upon to advise patients who either had no idea that they were harboring an adenomatous goiter, or had been told to forget about it, and who subsequently consulted the surgeon for some entirely different condition. The possibility that carcinoma of the thyroid gland may develop in cases of adenomatous goiter can no longer be denied. The incidence of carcinoma will range from 4.5 to more than 20 per cent, depending upon the method of study carried out and on the selection of cases.⁸ Our own experience, based on the study of a very large series of goiters at the clinic, has been that more than 8 per cent will be a very reasonable figure.⁹ Considerable discussion has been carried on recently in regard to the malignant potentialities of single discrete adenoma and multiple adenomas.^{7, 9} Almost all observers feel that the possibility of cancer is much greater in cases of single adenoma than in cases of multiple adenomas. The most important issue appears to be the fact that the patient may already have carcinoma, and that it cannot be diagnosed clinically.

In a recent survey, it was found that 50 per cent of the carcinomas of the thyroid were discovered at the operating table.⁹ To fulfill their obligation to the patient, surgeons are now advising thyroidectomy for adenomatous goiters whenever feasible. It seems strange that some physicians will make quite an emergency of a lump in the breast, and at the same time relax their vigil in a case of adenomatous goiter.

Coupled with the ever-present thought of cancer is the rather definite possibility of the development of hyperthyroidism. It is almost impossible to estimate what this chance might be, but some authors claim that hyperthyroidism will develop in half of the cases in which an adenomatous goiter is permitted to progress for a long time.

An increase in the size of an adenomatous goiter should not be overlooked. Patients frequently are hospitalized because of definite stridor resulting from an intrathoracic or substernal goiter. This constitutes a critical condition, and skillful medical and surgical treatment must be employed if a satisfactory result is to be obtained. Because of the serious complications that may occur in cases of adenomatous goiter, I believe that thyroidectomy should be performed in all cases in which it is feasible.

Thyroiditis

In cases of acute suppurative thyroiditis, the role that a surgeon plays may not be a prominent one. In some cases the history will reveal that pain and tenderness have been present over the gland but have subsided spontaneously within a few days. Occasionally, residual hemorrhage within the gland will persist as a tender nodule and be encountered at thyroidectomy. More often there will be no findings after the thyroiditis has healed completely. It is quite uncommon for the process to progress to the stage of suppuration and require drainage, but on rare occasions the surgeon may be called upon to perform that service. One hears of occasional reports of subtotal thyroidectomy being carried out in the presence of suppurative thyroiditis, but this operation usually will be out of the question because of the generalized inflammatory change. The more common sequence of events would probably be that the surgeon had performed subtotal thyroidectomy for a nodular goiter and discovered in the pathologic laboratory that the nodule was actually a small abscess.

There are two types of definite thyroiditis which are of tremendous importance to the surgeon. The first of these is the peculiar condition known as "struma lymphomatosa," or "Hashimoto's thyroiditis." The surgeon will be called to see the patient because of a nodular goiter. On prolonged careful examination of the neck, he will note that rather than the typical multiple nodules that he has come to asso-

ciate with adenomatous goiter, he is palpating a more diffuse process which tends to "shade off" into the periphery and to involve the entire gland in a similar manner. At times it may feel a good deal like a rather large exophthalmic goiter, and he may be puzzled because the patient certainly does not have hyperthyroidism. There may be such a marked change that the trachea is compressed, and symptoms of obstruction may actually be present. The gland is not tender, and there are no signs which one usually associates with an inflammatory process. Since a very high percentage of the patients already have hypothyroidism (many of them have myxedema), the metabolic rate will tend to suggest the diagnosis in many instances. The surgeon is not particularly struck by the effectiveness of his work in such a case; in fact, if the struma is not large, he might well avoid surgical removal of the goiter if he could be positive of the diagnosis. Many surgeons have been led to perform needle biopsy in such cases, but have not been well satisfied on the whole because the pathologist does not wish to give a final report on the entire gland from examination of a small specimen. The problem of thyroid hemorrhage could arise in cases in which biopsy is performed.

The alert surgeon will frequently lean toward the diagnosis of carcinoma, hoping that the lesion will prove to be thyroiditis. He strives never to find himself in the reverse situation. This will demand that he treat surgically the great majority of such patients. For a time, there was enthusiasm for very conservative bilateral thyroid resection with the hope that the rather large remnant might suffice for the metabolic requirements. However, the incidence of myxedema was no less marked than it was when a larger part of the gland was removed, and the incidence of progressive enlargement of the remnant was so great that most surgeons abandoned the conservative operation. Technically, the operation can be very difficult. After the isthmus has been removed completely and the trachea exposed widely, the lobes can be resected gradually, although one may encounter considerable adherence to surrounding structures. If an experienced pathologist is available, examination of frozen sections frequently will permit the correct diagnosis to be made at once. This type of examination is fraught with danger in this particular situation, and the surgeon may be forced to reach his own conclusion without final pathologic confirmation. Since the change is generalized throughout the gland, and the surrounding structures are not invaded as they would be in such a diffuse carcinoma of the thyroid gland, the surgeon usually will be able to stop short of a total thyroidectomy, as by this time he will be quite convinced that the lesion is thyroiditis. His role then will be, first, to establish the correct diagnosis, if possible, and second, to relieve tracheal compression,

if present, or to prevent its development. Post-operative observation of the metabolic rate will dictate whether the early administration of thyroid will be indicated. There is argument about the effectiveness of roentgen therapy, but I perhaps lean toward the thought that it is of doubtful value in such cases.

The clinical incidence of the second type of chronic thyroiditis, which is known as "Riedel's struma," is far lower. To the surgeon, this type may prove to be a serious problem. Once again, the surgeon should think in terms of cancer until it is proved to be absent. In cases of Riedel's struma, the physical findings may be the same as they are in a case of inoperable carcinoma. Unfortunately, not only may the entire thyroid gland be involved, but the inflammatory process may appear to extend into the trachea, the muscles the fascial planes, and the blood vessels and nerves throughout the thyroid region. Riedel's struma is said to occur more often in women than in men, and it usually occurs after the age of fifty years. The surgeon will be forced to carry out an exploratory operation to determine whether or not cancer is present. The technical features of thyroidectomy in such cases may be difficult in the extreme. The gland will be brittle and difficult to mobilize. Many of the patients will have received roentgen therapy, which usually does not have any effect. The surgeon will find that because of the fixation of the lesion to surrounding structures, the operation is fraught with considerable danger. In a case of this type, an attempt at total thyroidectomy could well result in injury of both recurrent laryngeal nerves, the trachea, the jugular vein and the carotid vessels.¹⁰ Most surgeons are well satisfied to remove the entire isthmus and to expose the trachea to relieve the pressure symptoms completely and render tracheotomy more feasible, should it be indicated. Enough of the lateral lobes may be removed (which often is a piecemeal process) to satisfy the surgeon and pathologist alike that cancer is not present. In this type of thyroiditis, the surgeon may feel rather helpless, but fortunate for him, the few things he is able to do will probably suffice to settle the diagnosis.

Carcinoma of the Thyroid Gland

In cases of the diffuse type of adenocarcinoma of the thyroid gland, the part that the surgeon plays may be very minor indeed.⁹ This type of carcinoma usually is very malignant and grows rapidly. By the time the patients come to the surgeon, the lesion often has spread beyond the confines of the thyroid gland. In most cases a radical operation will be unavailing, and it may well result in a fatal outcome. In most cases the primary role of the surgeon will be to remove a specimen of the lesion for biopsy and to relieve respiratory obstruction.

The effect of radioisotopes in this disease is being investigated. When the presence of this type of carcinoma is suspected at the clinic, we administer a tracer dose of radioiodine and then proceed with biopsy. A so-called autoradiogram of the specimen is made, and the information obtained in this manner is added to that obtained by a Geiger counter and by determination of the excretion of radioiodine in the urine.

At operation we remove as much of the malignant tissue as we can without damaging vital structures. At present, a portion of the thyroid cartilage or trachea can be removed without the fear of overwhelming sepsis which formerly existed. Tracheotomy may be an integral part of the operation, or nonabsorbable sutures may be placed through the cartilage of the trachea and brought out of the wound to serve as a guide in the post-operative interval when the patient is being treated with roentgen rays and radium. Occasionally, tracheotomy will become necessary later, and these sutures will greatly facilitate this procedure.

To date great strides have not been made in the treatment of this type of carcinoma. Since a marked uptake of radioisotopes occurs in a rather small percentage of cases, this type of therapy is not particularly encouraging. In a few cases in which a combination of various types of therapy has been used, the period of survival has been satisfactory.

Surgical treatment has been very successful in cases of so-called malignant adenoma of the thyroid gland. The malignant potentialities of adenoma have been the cause of considerable controversy among pathologists. It is generally recognized, however, that in certain cases a carcinoma may be found within an adenoma or spreading from its capsule. In such cases the carcinoma may be of several different types. It is important for the surgeon to recognize the condition and treat it at once. An excellent pathologic laboratory should be available in order that the correct diagnosis may be made at the time of operation. If the carcinoma is deep within the adenoma, it is entirely possible that subtotal removal of the gland will suffice. However, it is preferable to remove the entire lobe on the involved side with the entire isthmus. Since this will leave no remnant at all on one side of the trachea, periodic post-operative examinations will not lead to confusion as to whether a recurrent lesion is present. The prognosis may indeed be favorable in certain cases. For this reason, surgical treatment is indicated in most cases of adenomatous goiter.

A third general type of carcinoma of the thyroid gland is papillary carcinoma. In cases of this type of carcinoma, metastatic involvement of the cervical lymph nodes often becomes apparent before definite changes can be demonstrated in the thyroid gland. Even after removal of the cervical lymph nodes, con-

siderable time may elapse before nodules can be felt in the involved lobe of the thyroid gland. This type of carcinoma also caused considerable controversy because some pathologists formerly believed that the metastatic lesions were aberrant thyroid glands. Although this type of carcinoma characteristically occurs in young persons, it may occur later in life. A nodular goiter that occurs in childhood should be considered carcinomatous until it has been proved otherwise. When carcinoma develops in this type of goiter, it usually is of the papillary type.

Surgical treatment is particularly effective in cases of this type of carcinoma. If the lesion is limited to one lobe, removal of all of the involved lobe and the isthmus will result in a long period of survival in a large percentage of cases. Even if the lesion has metastasized to the lymph nodes, the prognosis may still be good if the involved lymph nodes are removed. The surgeon usually does a radical dissection of the neck in cases in which the lymph nodes are involved. At the clinic we are willing to make an exception in an occasional case. It has been demonstrated repeatedly that a less radical procedure, which spares the sternocleidomastoid muscle and internal jugular vein, will still produce a satisfactory result. Since many of the patients who have this type of carcinoma are children or young women, we often pursue a less radical course and have a great deal of evidence to support our policy.⁹ The five-year survival rate has been higher than 90 per cent. Roentgen ray and radium therapy may be used, although it does not seem that such a low grade lesion situated deep in the neck could be altered a great deal by this type of therapy. Radioiodine is not very effective since few of these lesions take up much of this radioisotope. This type of carcinoma of the thyroid gland recently has received a great deal of publicity which has led to a rather general conclusion that the surgeon, if given a chance at a reasonable time, can produce a very satisfactory result.

Summary

Subtotal thyroidectomy at the present time remains the preferred method of treatment in cases of uncomplicated exophthalmic goiter, especially in cases in which the patients are young. Radioiodine is very effective in the treatment of hyperthyroidism associated with exophthalmic goiter. At the clinic our present policy regarding the administration of this radioisotope in cases of exophthalmic goiter is as follows. It is used instead of thyroidectomy in cases in which the patients are elderly persons. It also is administered in cases in which the patients are younger persons who are poor operative risks. It occasionally is administered in cases in which young patients previously have undergone thyroidectomy several times and have returned to the clinic because of a recurrence of the goiter.

A single discrete adenoma of the thyroid gland should be removed surgically. The surprisingly high incidence of carcinoma in a multiple nodular goiter or in a thyroid gland that contains such a goiter, demands that this type of goiter also be treated surgically. The frequent development of hyperthyroidism in cases of adenomatous goiter is reason enough to treat such a lesion surgically.

Large, especially substernal or intrathoracic goiters, are best treated surgically. The danger of respiratory obstruction is always present. After it has developed, it greatly adds to the risk of surgical treatment.

In cases of thyroiditis, the role that the surgeon plays may be a rather minor one. His function is to establish the exact diagnosis, remove as much of the diseased gland as possible, and to obtain a proper airway for the patient. Injury of neighboring vital structures should be avoided.

In certain types of carcinoma of the thyroid gland, a note of optimism is warranted. As a result of

modern developments, the judicious application of surgical principles will often lead to a very satisfactory result.

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DISCUSSION

Chairman Franklin F. Ferguson, Portland, Maine: Thank you, Doctor. I know that some of you will have questions concerning Dr. Judd's talk, and he has assured me that he will be glad to have some discussion. We still have a few moments available for that purpose, if any of you have questions. Many of you will remember that some years ago, Dr. Judd's father presented an oration to this Society, which I believe was in Greenville at the first session of the Maine Medical Association that I attended. I was not through medical school at that time. We are now, again indebted to the Judd family.

Dr. James M. Parker, Portland, Maine: I should like to ask two questions. Because of an experience with an instance where there were rather extensive bilateral metastases in the small lesion, I am curious to know what your experience is with bilateral metastases from papillary carcinoma.

I was a little bit confused by the statement in regard to carcinomatous adenoma. I believe the doctor said that lymphatic involvement was seldom a problem, and there were not lymphatics in adenoma. I am not quite clear exactly what he meant on that point.

Dr. Judd: In regard to the first question, we do see bilateral involvement from some of the low-grade papillary things. We have gone along with bilateral neck dissection, saving the jugular veins, of course, in addition to doing a rather total thyroidectomy.

In the matter of the latent disease, that is the type of case where we will do it, if there is evidence of spread, beyond the mid-line. In some of these cases, we will see bilateral involvement. Although the prognosis with the bilateral case is nowhere near as good, we can still get the malignant growth out. Even if we

can't get it all out, we feel that we have helped the X-ray and radio-therapist a great deal, and in addition in those who will take up a significant amount of radio-active iodine, we can use a tremendous amount of radio-active iodine, in attempting to control what little carcinoma is left behind.

In regard to the second question, often the carcinoma is confined within the adenoma and is completely removed, and you may not even know it for several days, if the pathologist has not discovered it immediately.

Usually, in that type of case, we do not see the local regional involvement of the cervical nodes. However, of course we can see it in late cases, and whenever there is a question about it, we do proceed with neck re-section.

Chairman Ferguson: I believe Dr. Judd stated the incidence of carcinoma in adenomatous goiter was 8 per cent. I wonder if that has been broken down into groups of multiple, as compared to the single one?

Dr. Judd: We have attempted to break that down. Slaughter and Cole of the University of Illinois have stressed the importance of single adenomata. Barney Crile in Cleveland has stressed it. It is much more suspect in regard to carcinoma than the multiple one. The difficulty in the record room is that what has been stated to be a single adenoma, on physical, actually turns out to be multiple adenoma, when it gets to the laboratory, because there will be scattered small ones. For that reason, we haven't paid quite the attention to the single discrete ones that some of the other investigators have. However, we do agree that it is much more common in the single discrete one. You noticed in the exophthalmic goiter, there were very

few carcinomas, perhaps 0.5 per cent. Now, in discrete ones, there were considerably more.

Dr. Isaac M. Webber, Portland, Maine: Dr. W. J. and Dr. C. H. Mayo at one time entertained the idea that in a large degenerating adenomatous goiter, there is a toxic material given off, although there is no evidence of hyperthyroidism, as judged from the clinical or basal metabolism tests, but there was a toxic material that damaged the myocardium. I should like to know if there is any evidence supporting or refuting that idea.

I should also like to ask him if he has had very many instances of carcinoma arising in the long-standing adenomatous goiter, that shows considerable calcium deposit in the adenoma.

Dr. Judd: In regard to the first question, we certainly have thought that many of these older individuals, especially the hypertensive ones, should have a higher B.M.R. than actually they do have. We have removed the goiter, when as a matter of fact, the B.M.R. is plus 2 or plus 3. We have several tests available to us today, helping us to rule out the nervous type of individual who happens to have a goiter and is losing weight and many of the other things that might be ascribed to the goiter.

I am referring, here, to the protein-bound iodine, which will be a tremendous help, when properly studied, regarding the hyperthyroid state.

In addition, the radio-active tracer studies will help the internist decide whether there is a true state of hyperthyroidism.

Then, there are a few other people, and I am sure that Dr. Webber refers to these people, who have a goiter perhaps of long-standing, and they are going into cardiac decompensation; you know that that patient is on the borderline of the incipient hyperthyroid state. We have not hesitated to urge surgical treatment for what we think is impending catastrophe, namely, hyperthyroidism.

Regarding the carcinoma in the nodular goiter of long-standing, we know we will find it in occasional patients who have had goiter for many years, without any clinical change at all, and for that reason, we still insist that they have the goiter removed, even though they think we are pushing too hard, because we are finding cancers in more and more of these people.

I think the point that Dr. Webber was making is that we are relying on the firmness of the gland in making our diagnosis of possible carcinoma, and then we discover calcium, and perhaps calcium is visualized in the X-ray of the chest; then, do we relax and say that it is not serious? We do not.

Dr. George L. Maltby, Portland, Maine: I should like to ask Dr. Judd if he has any statistics on the so-called malignancies, post-operatively. Perhaps the hyperthyroidism is treated. Is there any instance of

that condition in the hyperthyroidism, treated by radio-active iodine?

Dr. Judd: That topic is under a great deal of study. Dr. Dobbins has been doing a lot of wonderful work on it. We hope to have information soon. We have been so distressed by this phenomenon, following the removal of the exophthalmic goiter, that our Metabolic Department will tell the patient, in regard to his eyes that three things may happen; his eyes may stay the same, or they may get better, or they may get worse; we have no way of knowing which ones will do which.

I suppose that Dr. Maltby is especially interested being a neurosurgeon, in an operation to decompress the orbit. Then, we get into the very complicated situation, in which the patient's metabolic rate may be down to minus 20, and we still are using some Lugol's solution post-operatively, because it is a malignant exophthalmic type of case; yet the Metabolic Department is prescribing thyroid extract, because the rate is down so far, because they feel the progressive exophthalmus is on that basis.

We have a satisfactory post-operative patient now taking not only Lugol's solution, but also thyroid extract, and his eyes are getting worse and worse, and we don't have the answer yet.

Dr. Joseph E. Porter, Portland, Maine: I should like to ask Dr. Judd with respect to the papillary adenocarcinomas, whether or not you ever give radiation therapy following removal of the tumor, or whether, as a rule, you have found from your statistical evidence, that radiation therapy is not necessary at all.

I mention that particularly in view of Dr. Lahey's paper on this subject.

Dr. Judd: Yes, we use radio-active iodine. Any patient who is suspected of carcinoma of any type is given a tracer dose before anything else is done. At suitable intervals, we proceed with the surgical approach. That means that a fairly good number of people are getting radio-active tracer doses that are not hurting them at all. We send the tissues for radio-active studies, and we couple that information with the excretion studies that we have on the urine, and then we use the Geiger counter prior to surgery. If the surgeon states in his record that he feels he has removed all of the malignant tumor, has been wide around it, and there is nothing further left at the moment of a malignant or potentially malignant nature, then we usually stay our hands in the therapy.

In the higher grade of carcinoma, we go ahead and use it, and frequently use a combination of it. If the radio-active tracer has shown a good intake in the radiograph, we will use radio-active iodine in heroic doses. We will certainly use all forms of radiation.

Continued on page 18

REVIEW OF FIFTY CHOLECYSTECTOMIES

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This is a review of fifty cases of gallbladder disease treated surgically at St. Andrews Hospital during 1950. An attempt is made to correlate the patient's signs and symptoms with the X-ray findings before operation, the surgical findings at operation and the pathological findings following operation. Also, note is made of the relative length of time each of these patients spent in the hospital. The youngest patient was twenty-three and the oldest was eighty. Sixteen of our patients were sixty-five years of age or over. All of these patients complained of pain. Twelve of them had symptoms of indigestion following ingestion of fried foods or fats. Symptoms ran from forty-eight hours in one case of acute cholecystitis to six years in a case of chronic cholecystitis with stones. (See accompanying tables.)

Forty-five of these cases were X-rayed and were found to have gallbladder disease although shadows of gallstones were not always obtained.

All of the gallbladders showed grossly one kind of disease or another. The pathological findings showed twelve cases of chronic cholecystitis without stones and twenty-five cases of chronic cholecystitis with stones. Sixteen showed acute or subacute cholecystitis of which ten had stones. In three cases there was both an acute and a chronic inflammation going on at the same time. Most of our cases under sixty-five were hospitalized on an average of between eight and nine days, whereas those over sixty-five were in the hospital between thirteen and fourteen days.

There was one case of an acute gangrenous cholecystitis with cholelithiasis who also had acute pulmonary tuberculosis. This case was done under spinal anesthesia, and was in the hospital for eleven days postoperatively. Another patient, a male, aged seventy-one, who had a subacute cholecystitis with cholelithiasis, had an evisceration of a portion of his incision on the ninth postoperative day and his stay in the hospital was increased to twenty days. Another one of these patients, aged sixty-seven, had diabetes but no postoperative complications. A young female aged thirty-nine, who was extremely over weight, developed a thrombo-phlebitis in the left saphenous vein seven days postoperatively and required an immediate saphenous ligation. She was discharged from the hospital thirteen days following her gallbladder operation. One patient in this group was found to have an early adeno-carcinoma as well as a grossly infected gallbladder. Thirty-five out of fifty cases in this group were found to have stones.

In all of these cases a cholecystectomy was done by first identifying the cystic artery, the common duct and the cystic duct. The cystic artery was clamped and ligated before removal of the gallbladder from its bed. The gallbladder was then removed from above downward. In this way, we were able to remove the gallbladder without injury to the bile duct.

Only two of these cases had stones in the common duct. One was Case No. 27 in which a large stone was removed from the common duct. In this case the "T" tube was allowed to remain eight days before its removal. The patient was in the hospital a total of twenty days because her home was in New York State and she wished to travel without the necessity of daily postoperative dressings.

The other patient, Case No. 12, was seventy-four years old and had a history of jaundice. At the time of operation it was thought that a stone could be palpated in the common duct but after opening the duct no stone was found. A "T" tube was placed and patient drained through this for nine days. Afterward, he made an uneventful recovery and returned to his home at the end of twenty days. This patient has had no postoperative jaundice.

Preoperatively, all of these patients were hospitalized for from twenty-four to fortyeight hours. They all had complete blood counts, complete urines, bleeding and clotting times. Preoperative chest X-rays were done. They were given Vita K and penicillin. Their fluid balance was established and maintained.

Postoperatively, penicillin was continued and fluids by vein as indicated. There were no drains to be removed. The patients were gotten out of bed on the first or second day. A diet containing amino-acid powder was started as tolerated the second postoperative day. Fluids only, by mouth, were given the first day.

In summary, it is of interest to note that of the fifty cases reported, thirty-five of them had cholelithiasis. All of the cases had gross gallbladder disease as noted at the time of operation. There were two preoperative complications and two postoperative complications. There were no deaths and no injuries to the bile ducts. All of these patients complained of pain.

Cholelithiasis is a common disease and not infrequently produces symptoms of such urgent character as to make surgery the only means of relieving the patient.

<i>Name</i> <i>Age</i> <i>Sex</i>	<i>Duration</i> <i>of</i> <i>Symptoms</i>	<i>X-ray Findings</i>	<i>Pathological Findings</i>	<i>Operative Findings</i>	<i>Days in</i> <i>Hospital</i>	<i>Complications</i>
1. G. D., 34 female	Pain for 6 months.	Nonfunctioning gallbladder.	Chronic cholecystitis. Cholelithiasis. Pigment. cholesterol stone.	1 fairly good sized stone down in the cystic duct.	8	None.
2. A. H., 65 female	Pain.	No filling defects. Gallbladder filled slowly.	Subacute cholecystitis. No stones.	Large gallbladder with a constricted band located at the junction of the fundus with the cystic duct.	10	None.
3. A. S., 74 female	Pain for 5 or 6 years.	Chronic cholecystitis with cholelithiasis.	Chronic cholecystitis. Cholelithiasis. Pigment cholesterol stone.	Huge gallbladder dilated about 5 times its normal size with multiple stones in the cystic duct and 1 stone in the common duct.	17	None.
4. E. A., 45 female	Pain for 14 months.	No X-rays taken.	Chronic cholecystitis.	A small contracted gallbladder, dilated duct with a chole- cystic duodenal ligament which bound the gallbladder down.	15	None.
5. G. M., 51 female	Pain for a number of years.	Cholelithiasis.	Chronic cholecystitis. Cholesterosis. Cholelithiasis. Pigment cholesterol stones.	Diseased gallbladder showing a deposit of cholesterol on lining and 16 stones, ranging from size of kidney bean to a grain of sand. Thickened walls.	9	None.
6. E. S., 39 female	Pain for 1 year.	Chronic cholecystitis with chronic cholelithiasis. Poorly filling gallbladder with calculi.	Chronic cholecystitis. Cholelithiasis. Solitary cholesterol stone.	Chronically inflamed and thickened gallbladder loaded with small calculi, some lying in the cystic duct.	13	Phlebitis. Postoperative thrombophlebitis of left saphenous vein 7 days postoperative.
7. S. W., 49 female	Pain for several months.	Chronic cholecystitis.	Chronic cholecystitis. Chronic cholelithiasis. Calcium bilirubinate stone.	Chronically thickened pale appearing gallbladder contain- ing several large stones.	10	None.
8. B. W., 31 female	Pain for 6-8 months.	Cholecystitis.	Chronic cholecystitis.	Dilated, thick-walled gallbladder. Many adhesions down toward the cystic duct and considerable congestion.	8	None.
9. L. B., 43 female	Pain for a number of years. Indigestion.	Nonfunctioning gallbladder.	Chronic cholecystitis.	An acutely congested gallbladder with many adhesions running between the gallbladder and the omentum and gallbladder and small intestine. Considerable difficulty because of vascularity of the vessel.	10	None.
10. R. B., 52 female	Pain for 2 years.	Multiple biliary calculi. Poorly visualized gallbladder.	Chronic cholecystitis with cholelithiasis. Facetted cholesterol stones.	A very large dilated gallbladder full of large stones from size of pullet's egg to size of grain of corn.	12	None.
11. E. R., 59 female	Pain for 1 year.	Poor visibility of gallbladder and multiple biliary calculi.	Acute cholecystitis with cholelithiasis.	A very friable, thickened dilated inflamed gallbladder full of stones.	14	None.
12. J. B., 74 male	Pain for 3 years	Gallbladder not visualized. Shadows resembling biliary calculi noted.	Chronic cholecystitis.	A swollen, congested, engorged gallbladder with marked edema of the gallbladder bed. Note: Bile duct was opened.	20	None.

<i>Name Age Sex</i>	<i>Duration of Symptoms</i>	<i>X-ray Findings</i>	<i>Pathological Findings</i>	<i>Operative Findings</i>	<i>Days in Hospital</i>	<i>Complications</i>
13. K. A., 33 female	Pain for 18 months.	Chronic cholecystitis with stones.	Chronic cholecystitis. with cholelithiasis.	A huge gallbladder with thickened walls, increased blood supply. Very thick muddy bile noted in gallbladder itself.	8	None.
14. E. B., 53 female	Pain for 1 week.	Cholelithiasis. Nonfunctioning gallbladder.	Subacute cholecystitis with cholelithiasis.	Large gallbladder with firm adhesions both to gallbladder bed and the duodenum. Congestion of the wall.	9	None.
15. A. H., 43 female	Pain for 4 years.	Poorly filling gallbladder with stones.	Chronic cholecystitis with cholelithiasis.	A large gallbladder. Many adhesions. Very vascular and containing stones.	7	None.
16. A. G., 55 female	Pain for 5 years.	Nonfunctioning gallbladder.	Chronic cholecystitis.	Chronically thickened dilated gallbladder with much congestion of blood vessels and a dilated cystic duct.	7	None.
17. M. F., 55 female	Pain for 3 months.	Cholecystic disease with possible stones.	Chronic cholecystitis.	An enlarged, inflamed, thickened gallbladder.	7	None.
18. M. C., 61 female	Pain for 48 hours. Indigestion.	No X-rays.	Acute cholecystitis with cholelithiasis.	A large, red congested, inflamed gallbladder containing 3 fairly good sized stones.	16	None.
19. A. D., 53 female	Pain for several months.	Nonfunctioning gallbladder.	Subacute cholecystitis.	Dilated gallbladder, thin and full of thick greenish bile. 1 stone in the cystic duct.	8	None.
20. E. B., 43 female	Pain for 3 months.	Cholelithiasis and cholecystic disease.	Acute and chronic cholecystitis.	A very large gallbladder, dilated about 3 times its normal size, full of gall stones (163 were counted).	7	None.
21. E. M., 66 female	Pain for 6 months.	Large gallstone near the common duct with poorly filling gallbladder.	Chronic cholelithiasis with calcium bilirubinate stone.	A very atrophic gallbladder with a large stone firmly adhered to the lining.	8	None.
22. S. S., 52 female	Pain for 2 months.	Nonfunctioning gallbladder full of stones.	Chronic cholecystitis with cholelithiasis.	A chronically diseased gallbladder with stones.	8	None.
23. M. B., 52 female	Pain for 1 year. Indigestion.	Nonfunctioning gallbladder.	Chronic cholecystitis.	A large gallbladder containing several stones.	8	None.
24. R. M., 67 female	Pain for 2 years.	Nonfunctioning gallbladder. No stones.	Chronic cholecystitis. Cholelithiasis. Pigment cholesterol stones.	A very thick, wrinkled, atrophic gallbladder containing 2 or 3 large stones. Many adhesions between the gallbladder and gallbladder bed.	8	Diabetes.
25. B. H., 35 female	Pain for 1 week.	Nonfunctioning gallbladder with small stones.	Subacute cholecystitis with cholelithiasis.	A very large gallbladder with numerous stones around the cystic duct. Congestion and inflammation of the wall of the gallbladder.	7	None.
26. N. B., 55 female	Pain for 4 years.	Nonfunctioning gallbladder with stone in the center.	Chronic cholecystitis. Early adenocarcinoma.	Grossly infected gallbladder with many adhesions between the gallbladder and bed of liver. There are several large stones inside.	11	None.

<i>Name</i>	<i>Age</i>	<i>Sex</i>	<i>Duration of Symptoms</i>	<i>X-ray Findings</i>	<i>Pathological Findings</i>	<i>Operative Findings</i>	<i>Days in Hospital</i>	<i>Complications</i>
27.	I. J., 71		Pain for 1 month.	Nonfunctioning gallbladder.	Chronic cholecystitis.	Contracted thick walled gallbladder with large stone in the common duct. Note: Bile duct was opened.	20	None.
28.	E. T., 62	female	Pain for 1 year.	Nonfunctioning gallbladder.	Chronic cholecystitis with cholelithiasis.	A large gallbladder containing many stones.	10	None.
29.	L. C., 45	male	Pain for 6 months.	Single stone in the gallbladder with poorly visualized gallbladder.	Chronic cholecystitis with cholelithiasis. Pigment cholesterol stone.	Chronically diseased gallbladder with numerous stones. Many adhesions between the gallbladder and second part of the duodenum.	9	None.
30.	E. G., 23	female	Pain for 1½ years. Indigestion.	Negative shadows strongly suggestive of stones. Poorly visualized gallbladder.	Subacute cholecystitis.	Chronically thickened gallbladder with adhesions between bladder and omentum. Several small stones located at the opening into the cystic duct.	8	None.
31.	C. P., 61	male	Pain for 3 days.	No X-rays taken.	Acute gangrenous cholecystitis with cholelithiasis.	An acute gangrenous gallbladder with stones.	11	Pulmonary tuberculosis.
32.	T. D., 71	male	Pain for 4 days.	Nonfunctioning gallbladder with 1 large and probably numerous small stones.	Subacute cholecystitis with cholelithiasis. Pigment cholesterol stone.	A very soft, diseased, friable gallbladder full of stones, one about the size of a marble.	20	Evisceration on 9th postoperative day.
33.	I. B., 53	male	Pain for 1 year.	Poor functioning gallbladder containing several shadows characteristic of stones.	Chronic cholecystitis with cholelithiasis. Pigment cholesterol stones.	Chronically diseased gallbladder with about 3 good sized stones.	8	None.
34.	M. D., 53	female	Pain for 3 years.	A poorly functioning gallbladder with stones.	Chronic cholecystitis with cholelithiasis.	A small congested gallbladder with 1 large stone.	8	None.
35.	M. S., 49	female	Pain for 2 weeks. Indigestion.	Gallbladder did not visualize and there were numerous gallstones, 1 or more in the ducts.	Chronic cholecystitis with cholelithiasis. Pigment cholesterol stones.	Chronically diseased, congested gallbladder with about 99 stones.	8	None.
36.	B. P., 68	female	Pain for 1 month.	Poorly visualized gallbladder with stones.	Chronic cholecystitis with cholelithiasis.	Thickening of the gallbladder and a muddy bile which contained 1 large irregular stone.	10	None.
37.	A. S., 72	female	Pain of 4 weeks' duration.	Poor visualization of the gallbladder with cholelithiasis.	Chronic cholecystitis with cholelithiasis.	Gallbladder which contained a number of all sized stones. Gallbladder wall thickened.	10	None.
38.	E. W., 57	female	Pain for many years.	Numerous shadows in the area corresponding to the site of the gallbladder suggestive of stones. Cholelithiasis.	Cholecystitis.	Gallbladder shows thickening and 1 stone jammed down into the cystic duct. Bile is of thick, muddy, black consistency.	8	None.

<i>Name Age Sex</i>	<i>Duration of Symptoms</i>	<i>X-ray Findings</i>	<i>Pathological Findings</i>	<i>Operative Findings</i>	<i>Days in Hospital</i>	<i>Complications</i>
39. M. K., 38 female	Pain for 1 year. Indigestion.	Small contracted gallbladder containing stones.	Subacute cholecystitis.	A thickened, small gallbladder containing many small stones.	7	None.
40. U. B., 66 female	Pain for 2 years.	Poorly visualized gallbladder containing stones.	Subacute cholecystitis with cholelithiasis. Pigment cholesterol stones.	Swollen, thickened, discolored gallbladder which contained several large stones, some as large as a golf ball.	10	None.
41. A. H., 71 female	Pain for 5 days.	No X-rays taken.	Chronic cholecystitis with cholelithiasis. Calcium bilirubinate stones.	Dilated gallbladder with stones in the cystic duct. Many adhesions between the gallbladder and its bed.	12	None.
42. H. T., 60 female	Pain for 24 hours.	Nonfunctioning gallbladder.	Acute and chronic cholecystitis. Cholelithiasis. Pigment cholesterol stones.	An acutely inflamed gallbladder containing many stones.	6	None.
43. A. B., 75 female	Pain for several years.	Nonfunctioning gallbladder with stones.	Subacute and chronic cholecystitis and cholesterosis.	Many adhesions between the gallbladder and the small intestine. Thick congested gallbladder wall, full of muddy fluid. Several small stones in the cystic duct.	10	None.
44. V. G., 64 female	Pain for 3 years.	Nonfunctioning gallbladder	Subacute cholecystitis with cholesterosis.	A long twisted thickened gallbladder.	10	None.
45. L. P., 65 female	Pain for 24 hours. Indigestion.	Cystic duct obstruction with hydrox of gallbladder. Nonfunctioning gallbladder.	Subacute cholecystitis with cholesterosis.	Hydrox of gallbladder. Many adhesions around the wall of the gallbladder with some scarring noted in the liver which is very friable.	10	None.
46. L. B., 80 male	Pain for 1 month.	Poorly functioning gallbladder.	Chronic cholecystitis.	Grossly diseased and congested gallbladder, the wall of which is very thick.	17	None.
47. A. P., 70 female	Pain for a number of years. Indigestion.	Nonfunctioning gallbladder.	Chronic cholecystitis. Chronic cholelithiasis. Pigment cholesterol stones.	A very large dilated gallbladder containing 15 or 20 stones of varying sizes.	20	None.
48. A. B., 36 female	Pain for 2 weeks.	No shadows obtained.	Chronic cholecystitis. Chronic cholelithiasis.	Small contracted gallbladder containing several large impacted stones. Cystic duct was dilated and bile duct grossly enlarged.	7	None.
49. H. M., 65 female	Pain for 6 weeks. Indigestion.	Nonfunctioning gallbladder full of stones.	Chronic cholecystitis with cholelithiasis.	Grossly diseased gallbladder which contained 457 gallstones by actual count.	9	None.
50. E. R., 62 female	Pain for 6 years.	No X-rays taken.	Chronic cholecystitis. Cholelithiasis.	A large duodenal diverticulum plastered up against the gallbladder bed. A gallbladder, large, thickened and full of stones.	10	None.

NOTES ON INTRACRANIAL HEMORRHAGE IN THE NEWBORN

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Intracranial hemorrhage in the newborn is in all probability far more common than present records and statistics indicate. The typical and gross hemorrhage is usually easily recognized and recorded at birth: the minor lesions, frequently not diagnosed or even suspected in the neonatal period, may not be evident until later in life when it is found that the infant or child does not show normal physical and/or mental development usual or normal for his age, and careful questioning will reveal those symptoms, apparently minor and overlooked at birth which are strongly suggestive of intracranial hemorrhage. One has only to note the large number of cerebral palsies most of which are the result of hemorrhage, the number of mentally and physically retarded and defective children, in many of whom we can check back and find enough evidence to justify a diagnosis. Even the number of cases confirmed by autopsies in the larger hospitals is very high. The family pediatrician, meaning the one in family practice, who follows his patient from infancy to puberty, realizes that diagnoses are not all made in early infancy, and that there are far more cases than our available statistics indicate. It is primarily the purpose of this paper to suggest that the obstetrician and pediatrician have these possibilities more in mind.

The obstetrician is usually reluctant to accept a diagnosis of hemorrhage, and often does not concur in the opinion of the pediatrician. Unfortunately the latter has too frequently used the term "birth injury" as a diagnosis and thus expressed himself to the parents. Over a long period of years, the writer has stressed the unfortunate use of this term and has not permitted its use in case records on his hospital services. Given a family with a defective, or paralyzed child, the pediatrician gives a diagnosis of "birth injury," the inference naturally is that as the child was "injured" at birth, the one responsible for the injury was the obstetrician. An overzealous lawyer gets into the case, a suit and all the attendant trouble and hard feeling. Most if not all of this could have been avoided by a complete explanation of the factors behind these hemorrhages absolving the obstetrician from all blame. We have always felt that the thoughtless and unfortunate use of the term has been responsible for the unwillingness of the obstetrician to accept the diagnosis of the pediatrician and causes much of the hard feeling, and often lack of coöperation in these cases.

Probably no one more than the pediatrician can appreciate fully the "miracle of birth:" the marvelous changes in circulation, respiration, blood, and others

when the infant changes from a parasite and is on his own. Yet many of the conditions present at this time are those that strongly predispose to intracranial hemorrhage. It has been known for thousands of years that there is a predisposition to bleeding in the newborn. The old Mosaic law postponed the rite of circumcision until the 7th day, a practical evidence. Modern research has proven a low prothrombin level as compared to that of the adult, from birth to the 3rd day, gradually rising to the 5th or 7th day. This is more marked in prematures who as we all know, are more predisposed to hemorrhage. Nature's method of delivery is also a factor. Consider the terrific pressures exerted by the contracting uterus, literally compressing the flaccid abdomen and naturally forcing blood to the head: this plus a possible weakly developed or friable vessel, the result is almost inevitable. A rough or instrumental delivery is by no means an essential cause; these hemorrhages can occur in easy, precipitate labors, or even in Caesareans if the mother has had contractions before the operation. Rough handling of forceps, or too strenuous efforts at resuscitation can do untold damage.

The role of Vitamin K is open to discussion. The prothrombin level in the infant can be raised by administration of Vitamin K to the mother 24 to 2 hours before delivery, and/or to the infant immediately after delivery. It is felt, however, that the hemorrhagic tendencies in the newborn are not entirely due to the low prothrombin level; that there is another yet unknown factor involved accounting for the frequent disappointing results from Vitamin K.

The location of the hemorrhage may be in any portion of the brain, sub-dural, sub-arachnoid, in the interventricular spaces, or in the brain tissue itself. There may be gross tears of the tentorium or falx. The great diversity of symptoms plus the difficulty of localization in the infant, makes a diagnosis of location most difficult. In general, we distinguish between supratentorial, and infratentorial, the former showing a bulging, tense fontanel, absent in the latter: spinal puncture negative for blood in the former, present in the latter. Tears of the tentorium or falx are usually accompanied by tears of the larger vessels, and the infant is usually dead at birth.

Symptoms show a wide variation, may be present at birth, and may not be evident until much later, in which cases the child does not show the normal physical and/or mental development one should expect for his age, and a careful check back on his

neonatal history will give one a clue. Any deviation from those normal changes that occur in the baby at the time of birth should be looked upon with suspicion. Asphyxia, unsatisfactory or delayed response to the usual milder efforts at resuscitation are suggestive. In the severe type, that is usually described as asphyxia pallidum, we have evidence of gross hemorrhage and the infant is in a state of real shock. The respiratory manifestations after respiration has been established may vary from weak irregular respirations of an exaggerated Cheyne-Stokes type to almost complete apnoea, with varying degrees of cyanosis. Nervous manifestations are also varied, and are usually irritative in type. They may range from mild twitchings to frank convulsions; there may be opisthotonus, rigidity of limbs, projectile vomiting, or intense sweating. There may be an early paralysis, usually spastic, but it may be flaccid. Absence of the normal sucking reflex is an almost constant finding, and is characteristic. The Morro reaction is usually absent or delayed. Eye examination may help, but as the vision in the newborn is imperfect, and not well co-ordinated, too much reliance can not be placed on pupillary reaction, although we frequently find unequal pupils, a failure to react to light, and very often, nystagmus.

Temperature readings are of especial interest, often explaining erratic temperature curves in the newborn, without other apparent pathology: readings may be hypothermal or hyperthermal, much beyond the usual ranges up or down, a very high temperature is usual just before death.

As noted above, too much reliance must not be placed on a bulging fontanel. The question of spinal tap has been and still is being tossed around: there are many who advise it, and as many or more, who feel that too much harm can be done. It is not an easy procedure in the tiny infant, and one cannot be too sure that blood in the fluid has not come from somewhere other than the canal. Even with perfect technique, a supratentorial type will not show blood. The question that arises is whether or not the release of even a small amount of pressure will not allow a recurrence of the hemorrhage: if done it should be most gently, and exceedingly small amounts taken off very slowly. If one is sure the condition is a cerebral edema, and not hemorrhage the procedure is justifiable, otherwise one wonders whether the information obtained and the possible therapeutic benefit justifies the risks.

The differential diagnosis is from tetany, cerebral edema, anoxia due to other causes, or possible fracture of the cranial bones during delivery. Neonatal tetany is not frequently seen, thanks to the almost

universal administration of calcium to the mother. Many of the classic symptoms of tetany are often found even in normal infants, a blood calcium would rule it out, yet the nervous manifestations so overshadow the other respiratory, circulatory and other symptoms of hemorrhage that the diagnosis is not often too hard. Cerebral edema without hemorrhage again offers an almost identical picture; however, the Morro reaction, absent or imperfect in the first few days, returns to normal much more quickly than in frank hemorrhages. Anoxia due to uterine causes such as premature detachment of the placenta, or excessive anaesthesia to the mother, is usually self-evident. Cranial bones have been fractured in rough forceps procedures.

Prognosis: The mortality is high, even where there are autopsies, the mortality is well over 50% of all newborn deaths; were there more autopsies it would probably be much higher. The milder cases recover slowly, but there are usually marked sequelae, varying with the extent of damage, and the location. These range from the severe cases of spastic paralysis, often wrongly called Little's disease, to the just not quite normal child. One should not be too pessimistic about the outcome, as many of them show a far more remarkable improvement than one would expect, and the achievements in overcoming their handicaps is well known. It is far better in describing these cases to use the word retarded, rather than defective.

Regarding treatment, prophylactic measures embrace all the usual neonatal procedures, the calcium administration to the mother being of decided advantage. We have mentioned the use of Vitamin K. Obstetric procedure should be as gentle as possible and this especially applies to resuscitation methods. The infant should be treated as one in shock, rest, warmth, oxygen if indicated, and occasional administration of a phenobarbital may be necessary to control the nervous manifestations.

The intramuscular injection of whole blood is often of value if given early, certainly it can do no harm. And above all, infinite patience, careful nursing and the old reliable *Tincture of Time*; they can not, must not be hurried.

In conclusion, after one has practised pediatrics for a long time, has seen the endless procession of mentally and physically crippled children pass before him, he cannot but feel that we know far too little about the newborn. It is with this thought in mind that we have presented the above in a sincere effort to stimulate interest in and appreciation of the care necessary at the most critical period in life, the birth of the baby.

ROUTINE X-RAY EXAMINATION IN OBSTETRICS WHY AND HOW WE DO IT

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We do not question that childbirth is better handled by the specialist who is able to limit his practice to this field. In the small community this ideal is hardly possible but the man engaged in the general practice of medicine and surgery must do the obstetrics that comes to him. We feel that X-ray examinations help in solving our obstetrical problems.

With present apparatus and technique, there should be no chance of harm to expectant mother or to the foetus in the making of required radiographic exposures. X-ray is not used for the diagnosis of pregnancy since the biologic tests now available are much more reliable and certainly positive long before any shadow of a foetus could be demonstrated in a film. Rarely in radiologic examination of the abdomen do we see foetal parts where they were suspected neither from history nor from physical findings. This is important but its mention will suffice at this time.

We do not believe that X-rays are necessary to all who do obstetrics, we do not believe they are indispensable in all our cases, but we are more sure of what we see than of what we feel or hear, consequently we take films routinely in our practice. We have followed this policy for some years in all cases coming under our care prenatally, making the examination during the last trimester, usually late in the eighth month or early in the ninth month of gestation. Two films are made, AP and lateral using the limit of the focal film distance of the apparatus (about 44 inches in ours). An opaque centimeter scale is placed between the buttocks in the lateral projection.

There are some definite findings in the films.

1. The position and presentation of the foetus. If the presentation is vertex and the occiput anterior, either left or right, without anterior, posterior or lateral shift and the pelvis obviously adequate in size, we assume that the delivery will be normal. This group which comprises the vast majority gives us little concern, and we can ordinarily dispense with further examination until labor starts. If the position of the occiput is posterior, we expect the patient to have a prolonged labor; therefore, we ascertain the history of previous deliveries if any, we check carefully on the size of the pelvis, sometimes repeating the examination at a later date using the more complicated methods of pelvimetry though we seldom obtain much additional information by so doing. If the presentation is anything but vertex, we always repeat the X-rays near term, hoping, as often happens, that the foetus has become in a better position for delivery.

2. Single or multiple pregnancy: the X-ray findings are conclusive.

3. Hydramnion; we have seen only one case in three years, its cause being microcephaly with open meninges.

4. The shape and size of the female pelvis, its transverse diameter and conjugate. We think the estimation of these two fairly accurate and generally conclude them adequate if the former is 13 cm. plus and the latter 11 cm. plus.

In addition to these positive findings, there are others of which we are less sure.

1. The size of the foetal head; we do not feel our estimations accurate at the present time.

2. Foetal abnormalities; we have seen none except the case of microcephalus mentioned above.

3. Foetal death, maceration.

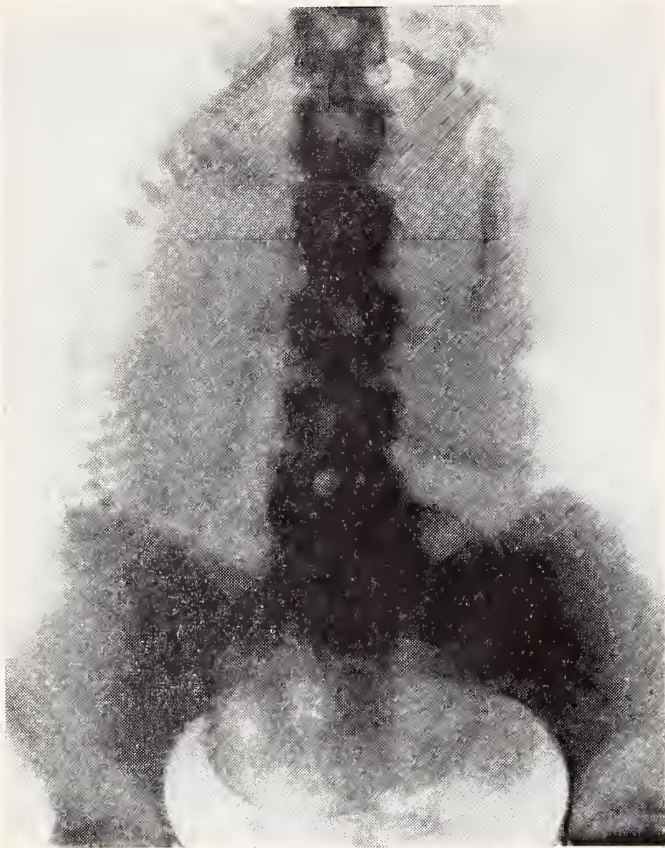
4. Extra-uterine pregnancy; we have had none of sufficient duration to be shown by X-ray.

5. The site of placental implantation. This has been very helpful and if we discard all other findings, the cases in which we have been able to make a diagnosis of placenta praevia have made our routine X-ray examinations well worth the time and effort. If we find that the foetal head is to either side of the mid-line, if it is more anterior, posterior or higher than normal, we suspect low implantation. Often we can outline the soft tissue of the placenta in properly exposed films. A history of previous bleeding or its occurrence subsequent to the X-rays help to confirm our suspicions and we treat the case accordingly. We resort to Caesarian section in all cases where we make a reasonably sure diagnosis of placenta praevia feeling that in our hands both mother and baby are safer by this form of delivery.

As our title indicates, we have given our reasons for the use of X-ray in our obstetric practice; we have also outlined the method which we feel best suits our purposes. We have neither given a detailed account of any of the methods of pelvimetry nor of obstetrical procedures. These can be found complete in many textbooks.

Following are the reports of two cases which have occurred in our practice during the past year. To us they demonstrate the value of our routine.

Case I, M. S., age 18, primipara. This patient gave a history of normal pregnancy and was sent in for X-ray near the end of the eighth month. The development of the foetus was in accord with the time.



CASE I



CASE I



CASE II

The head was down, the occiput to the right, one forearm was presenting, the head seemed high and the placenta could be outlined in both AP and lateral films as centrally placed over the os. There were no other abnormal findings, the pelvic measurements were adequate. Rectal examination tended to confirm the diagnosis. Vaginal examination was not attempted. As there had been no hemorrhage, the patient was sent home with instructions to return immediately if bleeding occurred. She returned at 4 a. m. the next day because she had begun to bleed a short time before. She was not in active labor. She was prepared for operation and delivered by Caesarian section at 9 a. m. Complete placenta praevia was present. Little blood had been lost and patient made an uneventful recovery, infant was normal and not apparently premature.

Case II, A. A., age 29, para. 3. Not under our care prenatally. Admitted in shock, had been bleeding for 2½ hours, taken directly to X-ray room, still bleeding, pulse 100, blood pressure 100/58. Hemoglobin 60%, red blood count 3,000,000. X-ray, AP only, showed vertex presentation, the head slightly to the right of the mid-line, the soft tissue outline of the placenta could be made out over the os, its center

Continued on page 26

GIANT TUMOR OF BREAST

PHILIP O. GREGORY, M. D., and IRVING I. GOODOF, M. D., St. Andrews Hospital, Boothbay Harbor, Maine

This forty-seven-year-old white female dancing teacher (Fig. 1) was first seen on August 4, 1951, at the request of her father. He stated that his daughter had noticed a lump in her breast about four years ago. This had increased in size and had become ulcerated about two and one-half years ago. This girl did not see a doctor because she was an ardent Christian Scientist. She had been losing weight and strength slowly during the past year and had to stop work entirely in December of 1950.

When she presented herself she was poorly nourished, weak and emaciated but in no acute distress. Physical examination revealed that the optic discs were poorly outlined and the pupils reacted sluggishly to light accommodation. The cardiac apex impulse could not be felt because of an overlying mass nor could the apex beat be heard. A soft blowing systolic murmur was heard best at the pulmonic area. The right breast was atrophic. The left breast was about

the size of a football, nodular and hard. There were several large ulcerated areas on the lower part of the mass. The upper portion extended toward the axilla but did not appear to involve it. There was slight pitting edema of both feet and ankles. There was definite limitation of motion of the left arm at the elbow because this patient had been carrying the tumor in her arm as a mother carries a baby.

X-rays taken showed no evidence of metastasis in spine, pelvis or lungs. Laboratory report on admission revealed that she had a red blood count of 3,000,000 with white blood cells of 17,100 and 30% hemoglobin. The differential was 85% polys and 10 lymphs. Her urinalysis was entirely negative.

She was given 2400 c.c. of blood before the operation and 500 c.c. of blood during the operation, so that the first day postoperatively her red blood count was 4,200,000 with 86% hemoglobin.

The operation was done under gas, oxygen and ether anesthesia and a huge tumor was removed. This involved the entire left breast, apparently localized to the breast with no axillary involvement. It weighed ten and a half pounds. The mass was ulcerated around the nipple. The tumor was removed by an elliptical incision and the skin was closed with stainless steel sutures. A drain was placed at the lower angle of the incision and the patient returned to her room in fair condition.

This patient weighed eighty-five pounds before operation and seventy-five pounds the day after operation. She made an uneventful recovery and left the hospital ten days later after all sutures had been removed. She was started on physiotherapy with massage of both legs on the first postoperative day and massage and exercise of the left arm on the sixth postoperative day.

Five months following operation this patient is back at her former job as dancing teacher and weighs one hundred and three pounds.

PATHOLOGICAL DISCUSSION

The specimen (Fig. 2) consists of a firm mass of tissue measuring 28 x 22 x 18 cm. in no way recognizable as breast in its present state. The mass is completely replaced by firm, gray-white, granular and hemorrhagic nodules, most of which are reasonably well encapsulated. Those near the skin surface have ulcerated through the skin and present themselves as raw, bleeding areas covering a space approximately 15 cm. in diameter. The tumor masses are present in all portions of the specimen although none have been



Fig. 1. This is the appearance of the patient just before operation. The size and nature of the mass is readily discernible as well as the pronounced ulceration and necrosis of the surface.

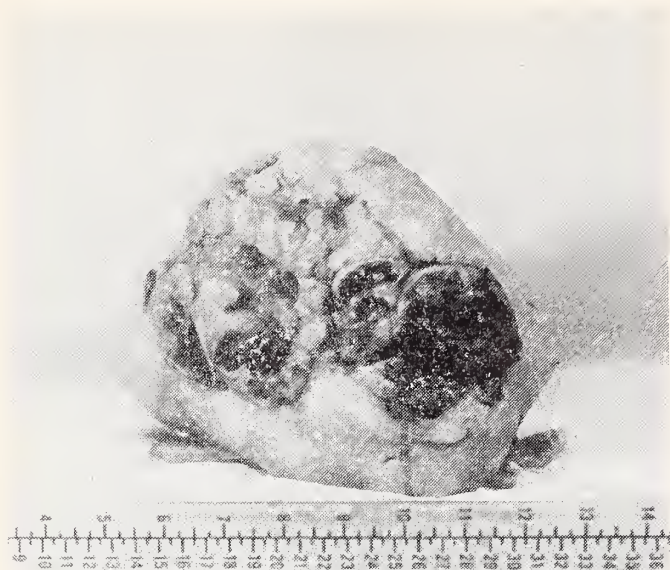


Fig. 2. This photograph shows the appearance of the lesion following removal from the patient showing a view from the inferior surface and demonstrating well the large area involved in the necrotizing process.

cut through in the process of removal. Section through the specimen reveals a relatively soft, mucoid, semi-fatty type of tissue, much of which shows cystic degeneration, especially in the region nearest the skin. The deeper portions of the specimen are solid but distinctly mucoid on their near surface. The lesion appears to have been completely removed since the tumor has not been cut through in the deep portions

of the specimen. The gross appearance suggests a fibroadenoma which has undergone massive growth with abundant mucin production and liquefaction necrosis. The microscopic picture shows no suggestion of malignancy. The appearance varies with some areas composed almost entirely of connective tissue muroid and other areas being fairly cellular. The cells are entirely fibroblastic in nature. There is extremely little epithelial component in this lesion. In some areas the appearance of the usual fibroadenoma is maintained with ducts showing compression and destruction of their epithelium by abundant, newly formed surrounding fibrous tissue.

The pathological diagnosis is giant adenofibroma with necrosis.

This mass shows a relatively unusual overgrowth of the usual fibroadenoma without the malignant change which is occasionally seen and called sarcoma botrioides. The recent activity of various educational organizations in urging early examination of the breast and other areas for the presence of masses has resulted in the relatively rare appearance of the lesion of this size for examination and treatment. The progression of this particular lesion in a period of four years is likewise unusual since we frequently see fibroadenomata which have been present for at least that length of time and have grown relatively little. The benign microscopic appearance of this lesion was a distinct surprise in view of the highly suggestive malignant appearance of the mass grossly.

Surgical Aspects of Thyroid Disease—Continued from page 7

We agree with the Lahey group that combined therapy gives better results than any therapy alone.

I know that we do find a great deal of the application of radio-active iodine; but, unfortunately many

of these people do not take up enough of the radioactive element to make it a therapeutic triumph. But we do use it in combination.

American Medical Education Foundation

Have you sent your contribution to the American Medical Education Foundation fund? If not—the below form is here for your convenience. Clip and mail with your check.

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AMERICAN MEDICAL EDUCATION FOUNDATION
535 North Dearborn Street, Chicago 10, Illinois

Date

I enclose my check for \$ as my contribution to the 1952 fund of the American Medical Education Foundation.

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(Make checks payable to the American Medical Education Foundation)

"HEARING IS IMPORTANT"

A Symposium

DR. GEORGE O. CUMMINGS, Portland, Maine; MRS. AUSTIN DURGIN, Portland Hearing Society;
MR. KEYES D. SANDERS, Superintendent, Maine School for the Deaf

PART I

Dr. George O. Cummings
Portland, Maine

Everyone begins to lose some hearing when they reach sixty-five.

A twenty-year-old young lady came to my office because of deafness. She could hear a voice at two feet. When I examined her ears I noticed three or four long scars across her head. As a child and a State ward she had been placed on a farm. When she did not respond, they hit her on the head. She subsequently learned to read lips well. She would have benefited by a hearing aid. Her disability should have been discovered when she first went to school.

Maine is fortunate in having the hearing of its children tested by phonograph or pure tone audiometers in many of its schools where lip reading instruction is also given. This program should be continued and expanded.

Enthusiastic support should be given "Hearing Centers" such as the one run by the Portland Hearing Society, where under the guidance of a technician a hard of hearing individual can select the make of electric hearing aid that suits him best without sales pressure.

Maine is again fortunate in having the "Maine School for the Deaf," which can care for one hundred boarding pupils. Here children who are totally deaf or who have too little hearing for public schools may attend from the age of five years until they are seventeen. They are taught to read lips and to speak in addition to studying the same subjects as normal children. This school, located in mid-Portland with its crowded grounds, needs to be relocated in a suburban area.

Suppose you discovered that your two or three-year-old child did not talk because he could not hear, what could you do? At present, in Maine, there is no agency to help such parents and children before the youngster is of an age to enter the School for the Deaf. A solution would be to have a number of training periods of a week's length at the School for the parents and the child. This could be further enhanced by having occasional follow-up visits in the home by

a trained worker, preferably based at the Maine School for the Deaf.

"Mary Smith" had lost three-fourths of her hearing. She is not a candidate for the School for the Deaf. She goes to public school. She needs lip reading and the sympathetic understanding of the principal of her school and her teachers. She would do well with a hearing aid. She has a speech defect as she has never heard properly.

Such children would benefit by a worker trained in the problems of the hard of hearing and speech correction, preferably based on the Maine School for the Deaf, who would from time to time visit them, their parents and their teachers to instruct and to encourage. There are such children scattered through the various public schools of the state. At present there is no means of getting hearing aids for children of indigent parents, although the "Crippled Children's Bureau" will supply wooden legs and the government will secure hearing aids for adults for purposes of rehabilitation.

The purchase of an electric hearing aid does not mean that the buyer will get full benefit from it at once, any more than that a person who buys a trombone will make music with it on his first attempt. The hearing aid user needs practice and patience. Some persons need auditory reeducation to bring back the appreciation of certain consonants which they have not heard for years. This would probably best be accomplished at "Hearing Centers," such as the one run by the Portland Hearing Society.

Deafness may be due to defects in the conductive mechanism: 1) Wax, foreign bodies, or infections in the ear canal. 2) Acute or chronic otitis media or their results. 3) Congestion in the Eustachian tube, frequently due to adenoids in children and occasionally due to nasal obstruction in adults from respiratory infection, nasal polyps, or allergy. 4) Otosclerosis, a particular type of deafness more common in women than in men, frequently beginning between twenty and thirty, in which there is usually family history of deafness. It tends to lead to profound deafness for which, in certain instances, there is sur-

gical help by a procedure called fenestration. Deafness may also be due to defects in the sound-receiving mechanism: 1) Senile deafness. 2) Boiler-maker's deafness—or that due to long exposure to heavy noise as in railway trainmen. 3) Concussion. 4) Fracture of the skull. 5) Drugs such as quinine and strepto-

mycin. 6) Congenital deafness which may be due to the mother having German measles at about the third month of pregnancy. 7) Deafness due to diseases as mumps, meningitis, whooping cough, measles, scarlet fever or syphilis, or a nerve deafness following acute otitis media.

PART II

Mrs. Austin B. Durgin

Portland Hearing Society

Just twenty-seven years ago, the Portland Hearing Society, Chapter 25 of the American Hearing Society, was formed by twelve hard of hearing women with the sole purpose of working for the alleviation of the problems of the hard of hearing adult and the prevention of deafness in children.

It was first known as the "Speech Readers' Club," and, living up to its motto, "To help each other and another," it has functioned through the years as a real service club in its own individual way. It has held meetings on every Thursday from October until May, offering to all hard of hearing persons who wished to avail themselves of its opportunities two free practice classes in lip-reading under trained teachers a month, one afternoon of musical or literary entertainment and other social programs.

The Portland Hearing Society was responsible for the first free classes in lip-reading for adults in Maine, formed twenty-five years ago in Portland Evening School, and those classes are still functioning two nights a week during the school terms at Portland High School.

The Portland Hearing Society purchased the first 4A Audiometer to be used in the State of Maine, that wonderful phonographic instrument whereby forty individuals may have their hearing tested at once. This was bought primarily to be used in the public and parochial schools of Portland, but its value was so appreciated at once that the city purchased one of its own, thereby releasing the one owned by the society to be used throughout the State, ferreting out hitherto undetermined cases of deafness in children and starting the program for hard of hearing children in Maine.

The Portland Hearing Society was indirectly responsible for the program of lip-reading in the Portland Public Schools. Today between 80 and 90 hard of hearing children are receiving lip-reading instruction along with their regular class work. There are 90 more who are eligible but there are too few teachers and so all schools are not covered. Today in the City of South Portland there is a splendid program for the hard of hearing child, with hearing

tests in the schools, adequate follow-up work and lip-reading instruction in class rooms.

The most recent extension of service to the hard of hearing by the Portland Hearing Society is the establishment of the "Hearing Center" at 653A Congress Street, Portland.

Many hard of hearing persons become confused and bewildered when they first start out to buy a hearing aid, but here in a quiet room under the most relaxing of surroundings, the hard of hearing client is met by a trained consultant technician who has a complete and sympathetic understanding of the problems of the hard of hearing. A small fee is charged for this service which includes first an audiometric test to determine the type and amount of loss of hearing. This determined, the client is allowed to try out the various and latest types of hearing aids approved by the American Hearing Society and so generously loaned to the "Center" by the hearing aid dealers in Portland. The client does not know the names of the instruments he is trying until he finds the one best suited to his needs; then he is given its name and referred to the agent who sells it. He is advised to wear one, is urged to take up the study of lip reading at once, informed of the Portland Hearing Society, invited to join, informed of the Portland Evening School classes and advised to consult an otologist if he has not already done so.

As funds increase the Portland Hearing Society wishes to increase the service of the "Hearing Center" to include auditory training and speech correction.

Anyone who has a hearing problem will do well to visit the "Hearing Center," 653A Congress Street, Portland, open all day Tuesday and Wednesday and other days by appointment by calling Miss Hazel Beecher, R. N., Portland, Telephone 2-6315.

As efficient as hearing aids are today, nevertheless there is nothing so important to the hard of hearing as lip reading, for when hearing fails beyond the use of an aid, lip reading is the only means of communication left with the hearing world, and realizing this the Portland Hearing Society is bending every effort

to keep the program for the hard of hearing child alive in Maine.

The Portland Hearing Society needs the help of all hard of hearing persons as well as hearing persons and the full support of the teaching and medical professions.

I was twelve years old when my hearing began to fail and I went through school, graduating from High School with impaired hearing and though I was an excellent lip reader at an early age there were times when the going was rough. Today I do not know what I would do without my hearing aid; I could not live the perfectly normal life I do, but after having lived with lip reading all my life and a hearing aid for twenty-five years I know that the intelligent use

of a hearing aid combined with a skill in lip reading opens a door of understanding to what would otherwise be an inarticulate world.

If you have a hard of hearing patient, do not give him pity, give him sympathetic understanding. Face him directly when you address him, do not ask him questions when you are back to him looking through your files and expect him to hear. Teach him if you can as I was taught years ago that a hearing impairment need not be a handicap, it is a way of life that must be met.

And please do everything in your power to keep the program of hearing conservation alive in the schools of Maine.

"Hearing is Priceless—Protect It."

PART III

Keyes D. Sanders, Superintendent

Maine School for the Deaf

First of all, let us define what we mean by deaf children. When I refer to the deaf I shall mean those who have no usable hearing as far as normal communication is concerned,—even with a hearing aid. It is this one factor that distinguishes the deaf from the hard of hearing.

The deaf are unable to learn through hearing in the normal manner. They have to be educated in special schools or in special classes by teachers who are trained in this field. They are unable to learn by their own efforts. Without this specialized teaching, the deaf would remain ignorant and about on a par with the feeble-minded because of their inability to communicate. They would never be able to manage their own lives. They would remain as charges on their families or on their communities as long as they lived. With an education, they become independent, self-supporting, property-owning, productive, tax-paying citizens. Without considering the humanitarian side of the question, it is plain common sense economy to give these children an education. They more than return the cost of their education directly through the taxes they pay and indirectly through their productive capacity in industry and business.

Let us next consider the extent of this problem of deafness. According to the latest data that I have seen there are more than 20,900 pupils in the schools for the deaf throughout the country. The schools are grouped as follows:

74 public residential schools with 13,600 pupils

The Maine School for the Deaf is one of this group

158 public day schools with 5,600 pupils

45 private and denominational schools with 1,700 pupils

Since the great increase in the birth rate began in the early 1940's, there has been a steadily increasing enrollment in these schools in proportion to the general increase in the entire school population.

Now let us consider the problem as it applies to the deaf child as an individual. The average hearing child entering the public school brings with him a vocabulary variously estimated as high as 2,000 to 2,400 words. He has fluent speech and a good understanding of language. On the other hand, the average deaf child comes to school at the age of five or six with no language, no speech and no vocabulary whatsoever. I wonder if you can fully realize the implications. He doesn't know the names of the common objects about him, the clothing he wears, the foods that he eats, the furniture he uses, the parts of his body. He doesn't know words like father, sister, mother. He doesn't know his own name or that he has a name. Without vocabulary and language, he has no way of crystalizing his thoughts, for words are the tools of thought.

At this point, the question that must be in your minds is this: "If this child has no vocabulary or language, how in the world do you start teaching him? How can you teach him anything about speech either, if he can't hear?"

Fortunately, all children love to imitate. It is a natural instinct. Fortunately, too, some of the sounds of speech are quite easy and natural to make. I have here a chart of the 40 odd sounds that are used in English. They are arranged according to a definite scheme for our purpose.

Since the children cannot hear, the sounds of speech cannot be taught through that sense. Speech actually is a muscular skill and our approach has to be

through the mechanics of speech. The pupils must learn, through sight and through the sense of touch, the correct position for a sound and the action required to produce the sound correctly. They must learn and remember how the sound is made and how it feels to make the sound.

From the easy sounds we proceed to the more difficult sounds until, after a year and a half, all forty of the English speech sounds have been taught.

The chief objective through the entire course is to teach the deaf children vocabulary and language. Their greatest problem is the understanding and the use of language.

Teaching in the classroom is carried on through speech, lip reading, reading and writing. At the Maine School for the Deaf, the course carries a pupil through the equivalent of the eighth grade. A few pupils continue their education by attending schools for the deaf which carry them through the high school level. An occasional pupil will go directly to a public high school. There is an opportunity to continue through the college level at Gallaudet College for the deaf in Washington, D. C., or at any college or university in the country.

In Maine, a deaf child may be entered at the age of five and is entitled to twelve years of study at the School for the Deaf. In order to qualify, he must be of normal mentality and must have a hearing loss sufficient to prevent material progress in the public schools.

At present, the school is unable to admit all the children who have applied for admission. There is need for a larger school plant in a new location where adequate playground space is available.

CONCLUSION

The following suggestions are desirable:

1. Continuation and expansion of the program for audiometric examination of children in public schools and for the teaching of lip reading.
2. Support for "Hearing Centers" such as the one run by the Portland Hearing Society, where under the guidance of a technician a hard of hearing individual can select the electric hearing aid that will help him best.
3. Moving the Maine School for the Deaf (100 boarding pupils) to a location with sufficient land for playgrounds.
4. Training for the pre-deaf school mute and parents by social service workers from the School for the Deaf and by training periods of a week, one or more times a year for child and mother at the school.
5. Social service follow-ups on children who have too much hearing for the School for the Deaf and barely enough for public schools directed toward the child, the parent, the teacher, and the principal of the school.
6. State funds for the purchase of hearing aids for selected cases of partially deafened children of school age whose parents have inadequate funds.
7. Speech training for partially deafened children with defective speech.
8. Auditory reeducation at "Hearing Centers" such as the one run by the Portland Hearing Society for older individuals whose electric hearing aids do not give entirely satisfactory results.

A LITTLE ABOUT SOME OF YOUR COLLEAGUES

Lawrence M. Cutler, M. D., of Bangor, has been appointed a member of the National Institutes of Health advisory council on Cancer, according to the U. S. Public Health Service. The advisory councils pass on applications for research and construction grants-in-aid aggregating about \$100 million annually.

Dr. Cutler is a member of the Penobscot County Medical Society.

Ernest W. Stein, M. D., formerly of Stockton Springs, has moved to Pittsfield, Maine. He is a member of the Waldo County Medical Society.

Dr. Stein, of Swiss descent, maintained a general practice on Long Island, N. Y., before moving to Stockton Springs.

William L. MacVane, Jr., M. D., of Portland, member of the Cumberland County Medical Society, and **Leandre R. Charest, M. D.**, of Biddeford, member of the York County Society, were elected to membership in the American College of Surgeons on November 9, 1951.

Arthur C. Strout, M. D., of Dexter, writes us that his son, **Warren G. Strout, M. D.**, has retired from private practice in Pittsfield to specialize in anesthesiology at the Eastern Maine General Hospital in Bangor. His Bangor address is 166 Broadway. Both father and son are members of the Penobscot County Medical Society.

EDITORIALS

Progress Notes on the Annual Meeting

At the most recent meeting of the Council of the Maine Medical Association at the Augusta House on the 19th day of December, it was felt that it would be impractical to eliminate the second banquet from the evening program of the Association this year.

It was decided that there will be two banquets, one on Monday evening, and one on Tuesday evening as in previous years. This is in accordance with the thought that a representative of the American Medical Association should be obtained to speak to the

group and that the speaker should be of the same high caliber as Doctor Kline who addressed us so forcibly last year. In order to obtain the benefit of such an important speaker and also transact the necessary business of the Association it was felt that these two evening programs would be essential.

Don't forget the Hobby exhibit.

LORING W. PRATT, M. D., *Chairman,*
Scientific Committee.

1952 Dues — Interim Session House of Delegates — Veterans Administration

American Medical Association Dues:

American Medical Association membership dues for 1952 are \$25.00. Check for dues should be sent to the Maine Medical Association, 142 High Street, Portland 3, Maine.

Fellowship dues for 1952 have been abolished.

The following exemptions from payment of AMA membership dues have been established by the Board of Trustees: (a) members for whom the payment of dues would constitute a financial hardship as determined by their local medical societies; (b) members in actual training but not more than five years after graduation from medical school; (c) members who have retired from active practice; (d) members who have reached the age of 70, on request, and starting January 1 following the 70th birthday, and (e) members who are called to active duty with the armed forces (exemption begins July 1 or January 1 following entrance on active duty). The last two categories are excused from AMA dues regardless of local dues exemptions.

American Medical Association membership dues include subscription to *The Journal of the American Medical Association*. Members may substitute one of the special journals published by the Association for *The Journal* to which they are entitled as members.

An active member is delinquent if his dues are not paid by June 1 of the year for which dues are prescribed and shall forfeit his active membership in AMA if he fails to pay the delinquent dues within thirty days after notice of his delinquency has been

mailed by the Secretary of the American Medical Association to his last known address.

State and County Dues:

State dues (\$35.00) and County dues are payable to your County Secretary. Deadline for payment of these dues is April 1, 1952.

The following may be exempt from payment of State and County dues on recommendation by *their* county societies: Members who have completed fifty years of active practice; members in good standing when they have retired from active practice, or who have been physically disabled; and any member in good standing who has attained the age of seventy prior to January 1. Members in Military Service are also exempt from payment of State and County dues.

Interim Session House of Delegates:

The Interim Session of the House of Delegates of the Maine Medical Association will be held on Saturday, April 12, 1952, at the Lancey House in Pittsfield, Maine.

Veterans Administration Regarding Prescriptions:

We want to call your attention to the letter from Dr. Lorrimer M. Schmidt, Chief, Out-Patient Division, Veterans Administration Center, Togus, Maine, on page 26, in which he urges you to assist the veteran, your druggist and the Veterans Administration by correctly making out your prescriptions and outlines the correct procedure.

PORTLAND MEDICAL CLUB'S SOLUTION TO — "OPERATOR, CAN YOU GET ME A DOCTOR?"

The problem of getting a doctor for an emergency case, or for a case that the patient thinks is an emergency, is a thorny one. It is also a most important one in that if a person cannot get a doctor when he needs one, or thinks he needs one, the criticism of the medical profession is vituperative and widespread.

Furthermore, the Code of Ethics of the American Medical Association, which has for years been adopted as the Code of Ethics of the Maine Medical Association, places a heavy responsibility on the individual doctor. Chapter II, Section 4 of that Code says:

"A physician is free to choose whom he will serve. He should, however, respond to any request for his assistance in an emergency or whenever temperate public opinion expects the service. Once having undertaken a case, the physician should not neglect the patient, nor should he withdraw from the case without giving notice to the patient, his relatives or his responsible friends sufficiently long in advance of his withdrawal to allow them to secure another medical attendant."

In a city no larger than Portland, however, this precept is not self-executing, and it is much to the credit of the Portland Medical Club that early last year that group undertook to set up the machinery to distribute the work and to pledge the services of its younger doctors to carry the burden of this public service.

The Telephone Answering Service Bureau, Inc., generously offered operators, switchboard and service free for one year. The devoted and intelligent work of their operators has done much to make the project successful. The Portland Medical Club is now undertaking the expense of this Emergency Medical Service for the ensuing year.

An outline of this plan is well set out in a letter from Dr. Isaac M. Webber, President of the Portland Medical Club, to all its members:

"The purpose of the plan is to provide continuous Emergency Medical care to the City of Portland. It was felt necessary to institute the plan because of public criticism that doctors have not been available for emergencies.

"It is admitted that the plan is not perfect but it seemed to answer the problem most satisfactorily. In order to equalize the burden the selection of doctors had of necessity to include all specialties. Therefore, every active practitioner under 46 years of age is expected to participate.

"The plan is set up as follows:

1. Two doctors are assigned to each day of the

month. Insofar as possible one of these two commonly takes house calls. (Our apologies to the Pediatricians, some younger surgeons and others.)

2. Each emergency call is referred to each doctor alternately.
3. If doctor is to be unavailable on his day, he will notify the service of his substitute.
4. Each day runs from 12 noon to 12 noon.
5. It is the responsibility of the physician called to provide definitive care for the patient in question by one of the following ways.
 - a. Going to see the patient himself and administer treatment.
 - b. Going to see the patient, evaluate the situation and refer to proper place or person where patient will be treated.
 - c. Evaluate the situation over the phone and refer the patient to the proper place or doctor for definitive care. This means, to contact and see to it that another physician goes to see the patient. Otherwise, contact the hospital and make arrangements for admission, and transportation if hospitalization seems indicated.

"The responsibility of the physician on call does not end until the patient is being cared for.

"There are two categories for credit and one for debit.

Blue credit for caring for the patient.

Green credit for handling the call only.

Red debit for refusing either.

"The credits and debits will be read monthly and published annually.

"It is the responsibility of each physician to notify the Telephone Answering Service of his credits and any debits he knows of, that is, if he makes a call on a patient, be sure the service is informed, so a blue credit is chalked up beside his name.

"In the case of specialists, they are expected to handle calls and receive green credit just as any other physician. However, it is expected that they will refer cases to another doctor if they feel they would be unable to handle the situation. In such a case, they may contact the service, find out which one or which doctors have the least blue credits, contact one of these doctors and see to it that the patient is cared for. On an 'off day', they may also be expected to handle calls for other doctors, if the case happens to fall in their line of specialization. Any such 'Special' referral will rotate through the specialists in the par-

ticular field, going to specialist who has the least blue credits."

The plan was not publicized in the newspapers at its inception but it is noted in the telephone directory by a listing under "Emergency Medical Service," and by an advertisement in the classified telephone directory under "Physicians and Surgeons." Delaying publicity has enabled the program to get a firm footing and snags to be ironed out before the public floods the service with calls.

As is to be expected in an operation involving sixty-odd doctors and the public generally, there have been some flaws in the service, but in the over-all picture it has been successful. To compensate for the few failures are the instances of doctors who really make sacrifices in order to do their parts on the day assigned to them.

There is the doctor who gives up his day at Togus if it conflicts with his assigned day on the emergency service; there is the pediatrician who always takes his calls in turn and when one came in that was entirely out of his line but sounded serious, said, "I'll go down and hold the patient's hand until you can get a doctor in this line."

When a new project like this is successful there is always coöperation by all people involved in doing their individual parts; but, in addition, if you will look behind the scenes you will find an individual or a small group of them who deserve some sort of medal for services "above and beyond." In the present instance a great deal is owed to the committee of doctors who managed this operation. They deserve this citation of their names, and more:

Philip P. Thompson, Jr., M. D.

George I. Geer, Jr., M. D.

Gisela K. Davidson, M. D.

William C. Burrage, M. D.

Philip H. McCrum, M. D.

The public response has been excellent and abuse of the service slight. Individuals who have been served have been most appreciative, one even to the extent of a letter to the newspaper's "Voice of the People."

The Portland Medical Club is to be congratulated on putting into practice in this complex modern age the first principle of their Code of Ethics:

"The prime object of the medical profession is to render service to humanity."

INTERIM REPORT OF THE COMMITTEE ON MATERNAL AND CHILD HEALTH

At the meeting of the House of Delegates at our annual meeting in 1951 at Poland Spring the Reference Committee of the House, Dr. Clyde I. Swett, Chairman, made the following recommendations:

1. That the House of Delegates recognize the outstanding study made by the Committee on Maternal and Child Health.
2. That the House of Delegates authorize the Committee on Maternal and Child Health to continue its study, and work out ways and means for the development of the objectives outlined in the above recommendations, subject to the approval of the Council as it may be needed from time to time.

The Committee report makes 12 recommendations to improve maternal and infant death rates. The fulfillment of 12 recommendations in a short space of time would be nothing short of miraculous, and the Committee on Maternal and Child Health is not prepared to submit a plan for the achievement of all the proposals at this time. However, the Committee did meet in August, reviewed the recommendations, and analyzed the 1949 Infant Death Reports as received from the State Health Department of Vital Statistics and the Maternal Death Reports. The total Infant Deaths were 732; male 432 and female 300. The total Maternal Deaths were 18.

The Committee decided to focus attention on the Maternal Deaths at this time. At the same time the Committee re-affirmed its support of its recommendation for the Care of Infants and Children. Detailed study of the 18 Maternal Deaths revealed the following facts; three chief causes for deaths of the mothers:

1. Toxaemia	6
2. Hemorrhages	5
3. Infections	5

Here, then, is recorded the deaths of 16 mothers; mothers whom present day obstetrical supervision and care expected to carry through to a satisfactory conclusion with a living mother and a living baby. But the 16 died because 6 had Toxaemia of pregnancy, 5 had uterine hemorrhages, and 5 had puerperal infections. The Committee considered the fatalities judiciously from various angles which effected the end result. After taking under consideration all the factors, they concluded that the medical profession might help to reduce the mortality rate if they could make a united effort to develop three programs: First, establishment of pre-natal clinics and promulgation of education of pregnant women for early examination. Second, establishment of blood banks. Third, early recognition of infections and vigorous use of chemo-therapeutic measures.

In the opinion of the Committee, active, successful pre-natal clinics, available and servicable blood banks, and vigorous use of our antibiotic drugs would help to reduce the Maternal Death rate. The fact that the three major causes were complicated by other serious conditions was recognized by the Committee. Nevertheless, toxæmia, hemorrhages, and infections played a major part. Other causes were:

1. Asphyxia.
2. Delayed shock following Caesarean Section.
3. Ruptured uterus produced three fatal hemorrhages, placenta-previa—two.

In order to accomplish the objectives suggested by the Committee, it is recommended that at an early

date the President of the State Association request the Presidents of the County Societies to appoint a member from his Society to the State Committee for the purpose of making plans to push the program in all Counties.

The Committee wishes to present the above as a report of progress and plans to meet at a future date to consider the Infant Mortality rate.

ALICE A. S. WHITTIER, M. D.,
VIRGINIA C. HAMILTON, M. D.,
CLAIR S. BAUMAN, M. D.,
THEODORE M. STEVENS, M. D.,
LEROY C. GROSS, M. D.,
THOMAS A. FOSTER, M. D.,
Chairman.

PREScriptions FOR VETERANS — THE CORRECT PROCEDURE

To the Members of The Maine Medical Association:

From time to time over the past five years, I have brought to your attention certain policies of the Department of Medicine and Surgery of the Veterans Administration to enable you to continue your excellent service to our veterans with the minimum of inconvenience to yourselves and in an attempt to expedite payment for your services. During the past few months, veterans, doctors and pharmacies have been experiencing difficulties in obtaining medicines, receiving payment for medicines furnished, or by reimbursing the Government for writing a prescription without proper authorization. All of these situations can be corrected if the procedures outlined below are followed.

Having obtained the monthly authorization from the Out-Patient Division, Veterans Administration Center, Togus, Maine, to treat a veteran, the doctor must:

1. Write the prescription in duplicate;
2. Place the veteran's name, address and C number on both prescriptions;
3. Print, write, or typewrite on the prescriptions the following statement—"I am authorized to

treat and prescribe for the above-captioned Veterans Administration patient.";

4. The doctor must write the date on the prescription;
5. The doctor must sign the prescription with his regular signature.

Failure to obtain an authorization each month to treat a veteran will result in the doctor receiving a bill to reimburse the Government for the cost of the prescription, plus the 10% additional administrative fee of the Pharmaceutical Association as required by Government regulations.

Failure to write the veteran's name, address, C number, date and signature will result in the pharmacy being unable to fill the prescription and the veteran being unable to obtain the medicine; or the prescriptions will be returned by the Veterans Administration to the Pharmaceutical Association and will not be paid.

I urge you to assist the veteran, your druggist, and the Veterans Administration by correctly making out your prescriptions.

LORRIMER M. SCHMIDT, M. D.,
Chief, Out-Patient Division.

Routine X-Ray Examination in Obstetrics—Continued from page 16

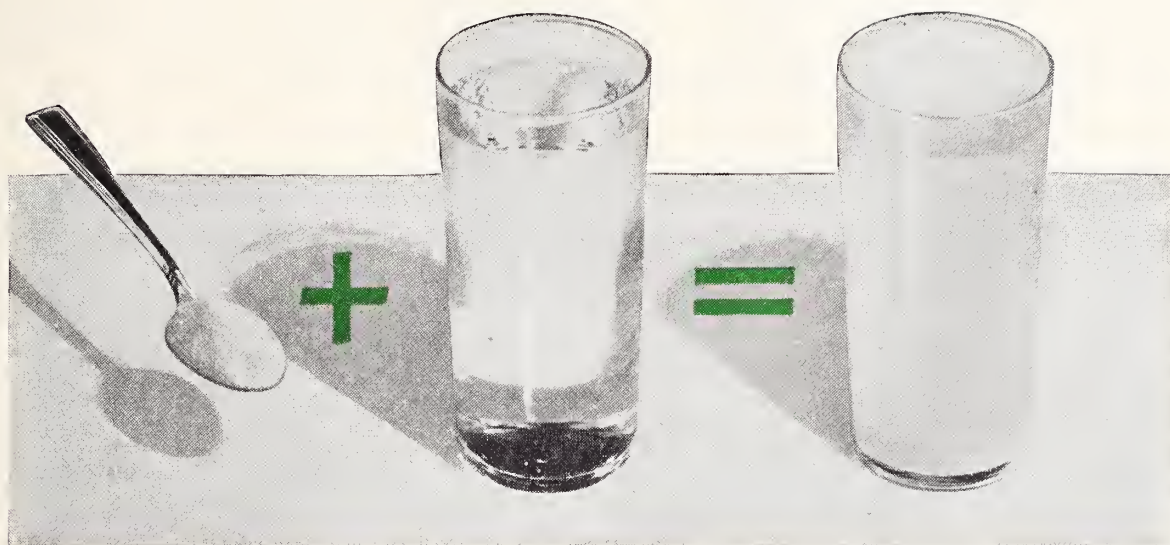
about 2½ inches to the left of the mid-line. Transfusion of 500 c.c. citrated blood given immediately, patient delivered by Caesarian section of normal infant near term. Placenta found as shown by X-ray Transfusion followed by 1000 c.c. 10% glucose in normal saline, and this in turn followed by another 500 c.c. of citrated blood. Subsequent course was progressive and uninterrupted, the patient received

no further transfusions and on the third postoperative day the blood was 4,100,000. The patient was discharged on the eighth day.

Comment: Had this patient been under our care prenatally, we know she would have been previously X-rayed and we believe that we would have suspected her condition and have treated her accordingly.

Normohydration

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Typically, the constipated stool is dehydrated, whereas the diarrheal stool or that induced by salines and irritants is hyperhydrated, containing free water.

When Metamucil is employed for the management of constipation, it is mixed in a full glass of cool liquid. The ingested liquid containing the mucilloid promotes normohydration.

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

COUNTY SOCIETIES

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President, Merrill S. F. Greene, M. D., Lewiston
Secretary, Ralph A. Goodwin, Jr., M. D., Auburn

Aroostook

President, Bernard H. Gagnon, M. D., Houlton
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Theodore M. Stevens, M. D., Portland
Secretary, Ralf S. Martin, M. D., Portland

Franklin

President, Wallace H. Duffy, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, W. Edward Thegan, M. D., Bucksport
Secretary, Joseph H. Hanson, M. D., Bar Harbor

Kennebec

President, Edwin W. Harlow, M. D., Waterville
Secretary, Arch H. Morrell, M. D., Augusta

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Secretary, Robert L. Allen, M. D., Rockport

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Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Linus J. Stitham, M. D., Dover-Foxcroft
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York

President, Melvin Bacon, M. D., Sanford
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Franklin

At the annual meeting of the Franklin County Medical Society held Monday evening, December 10, 1951, the following officers were elected for 1952:

President, Wallace H. Duffy, M. D., Farmington.

Vice President, Charles W. Eastman, M. D., Livermore Falls.

Secretary-Treasurer, Paul E. Floyd, M. D., Farmington.

Delegate to the Maine Medical Association, Currier C. Weymouth, M. D., Farmington. Alternate, George L. Pratt, M. D., Farmington.

Board of Censors: Harry Brinkman, M. D., 1 year; Currier C. Weymouth, M. D., 2 years; Maynard B. Colley, M. D., 3 years.

Paul Fichtner, M. D., of Rangeley, an unusually well trained, capable and willing general practitioner was elected to membership.

The Society voted to endorse the American Red Cross Mobile Blood Bank Collecting units for the Armed Forces which is to get under way in the State in 1952.

At the regular Staff Meeting of the Franklin County Memorial Hospital, Mr. Robert O'Connor of Augusta, substituting for Mr. Herbert E. Locke, spoke relative to some medical legal problems of interest to the profession.

PAUL E. FLOYD, M. D.,
Secretary.

Kennebec

A regular meeting of the Kennebec County Medical Association was held at the Veterans Administration Center, Togus, Maine, November 15, 1951. The meeting began with dinner at 7 p. m. served to thirty-six at the nurses' home through the courtesy of the Veterans Administration. Following the meal we, as usual, adjourned to the hospital.

President Edwin W. Harlow opened the business session about 8 p. m. The first item was the approval of the record of the last meeting. President Harlow then called on E. H. Jackson, M. D., Chairman of the Committee on Resolutions on the death of George A. Coombs, M. D., of Augusta. Dr. Jackson read the following:

George Appleby Coombs, M. D., Augusta, Maine, died July 22, 1951. He was born in Auburn, Maine, March 2, 1874. Following his graduation from the Maine Medical School in 1900 he was assistant surgeon at the Soldiers' National Home, Togus, Maine, from 1901 to 1907. For the next forty-four years he practiced medicine in the City of Augusta, being a member of the Augusta General Hospital Staff for thirty years; serving six years as Chief of Staff; at the time of his death he was surgeon emeritus.

During his practice he took several post graduate courses, always keeping well posted in the field of medicine. He was a past master of the Bethlehem Lodge and a 32nd degree Mason.

Dr. George Coombs was a most conscientious and careful practitioner, loyal to the interests of his profession and its advancements, always courteous and ethical in his professional relations—he had the respect of his associates.

All in all, he was a real gentleman, a good surgeon, a successful practitioner, a fine Chief and a faithful friend.

/s/ E. H. JACKSON, M. D., Chairman
R. L. MCKAY, M. D.
W. J. O'CONNOR, M. D.

It was voted that the memorial be accepted, spread upon the record, and that a copy be sent to his widow.

As all members of the Committee on Resolutions on the death of William L. Gousse, M. D., were absent, the President called on the Secretary to read the following:

Whereas: In the passing of William L. Gousse, M. D., we have lost a beloved confrere, who ever upheld the highest aims and ideals of our Profession; who served us faithfully as a most efficient President; who endeared himself to his patients by his untiring devotion to them in time of need; and whose constant interest and support of every worth while endeavor brought him the respect and esteem of his fellow citizens;—

Therefore, be it resolved: That we, the members of the Kennebec County Medical Association, mourn his death and express our sincerest sympathy to his bereaved family:—

And be it further resolved: That copies of these resolutions be sent to his family and spread upon the records of this Association.

/s/ NAPOLEON BISSON, M. D.
L. ARMAND GUTE, M. D.
FREDERICK T. HILL, M. D.

It was voted that the above be accepted and the recommendations of the committee be followed.

President Harlow appointed as a Nominating Committee the following—I. E. McLaughlin, M. D., Gardiner, Chairman; Paul D. Giddings, M. D., Augusta; and Kenneth W. Sewall, M. D., Waterville.

The applications of the following, having passed the Council, were balloted upon, and they were duly elected.

Stanley J. Staciva, M. D., Augusta.

Oakley Arthur Melendy, M. D., Augusta.

Charles E. G. Shannon, M. D., Waterville.

Allan J. Stinchfield, M. D., Augusta.

William B. McAvoy, M. D., Waterville.

President Harlow then turned the chair over to Dr. John Nelson, of the Veterans Administration, who, with a few well-chosen words, introduced J. Englebert Dunphy, M. D., of the Peter Bent Brigham Hospital, Boston, whose subject was "New Conceptions in the Surgery of Cancer"—he spoke of the traditional concepts regarding cancer—that it is autonomous (he mentioned evidence against this); estrogens and breast and prostate; spontaneous regression and explosive recurrences; type of growth—early treatments, histology and allied biology; surgery; he brought out that lack of early treatment may not always be too serious; that the biology of the particular tumor is the big question in each case—he brought out the tremendous importance to the individual patient of the continued attention by the physician—not to give up hope.

His talk was very interesting and informative. The association is indebted to the Veterans Administration for another good meeting.

A. H. MORRELL, M. D.,
Secretary.

New Members

Androscoggin

Norman O. Gauvreau, M. D., 78 Pine St., Lewiston, Maine.

Ralph Zanca, M. D., 92 Pine St., Lewiston, Maine.

Franklin

Paul Fichtner, M. D., Rangeley, Maine.

Kennebec

William B. McAvoy, M. D., Waterville, Maine.

Oakley A. Melendy, M. D., 21 Western Ave., Augusta, Maine.

William N. Runyon, M. D., 20½ Middle St., Augusta, Maine.

Charles E. G. Shannon, M. D., 9 Park St., Waterville, Maine.

Allan J. Stinchfield, M. D., 6 Warren St., Hallowell, Maine.

Stanley J. Staciva, M. D., Veterans Adm. Center, Togus, Maine.



From where I sit by Joe Marsh

"Fireman, Save My—"

Volunteer Chief Wilson was telling a few of us about some of the extra jobs firemen do. Like rescuing tree-climbing cats—and kids who get stuck almost any place.

"Take last week," he says. "Mrs. Campbell called up from Balesville where she was shopping. Asked if we'd mind going to her house and see if she'd left the fire on under the potatoes!"

"Dusty Jones drives the five miles to Campbell's place, and it turns out she had left that fire on. But don't get the idea we're complaining about those odd jobs. We're always glad to co-operate anytime we possibly can."

From where I sit, these boys—and volunteer firemen everywhere—stand for something mighty important to this nation. Most things seem to work out better when they're done *voluntarily*. Whether it's a ballplayer or a beverage you're choosing, whether it's the way to run a newspaper or how to practice a profession, it's the individual freedom of choice that has made America great.

Joe Marsh

OPENINGS FOR GENERAL PRACTITIONERS

Stockton Springs, Maine

The population of Stockton Springs is about 1,000 with the population of two adjoining towns of 1,800 to draw from. Stockton Springs is located on U. S. Highway No. 1. It is twenty-five miles south of Bangor, ten miles east of Belfast, on Penobscot Bay. Hospital facilities are available in Belfast and at the Eastern Maine General Hospital in Bangor. Several good homes with modern conveniences are available.

For further information write to: Mr. George H. Hopkins, Stockton Springs, Maine.

Easton, Maine

The town of Easton is in need of a physician. Population 1,664. Easton is seven miles from Presque Isle, twelve miles from Fort Fairfield and ten miles from Mars Hill. Hospital facilities are available in Presque Isle, Fort Fairfield and Mars Hill.

A good home is already available.

For further information write to: Mr. Willis A. MacPherson, First Selectman, Easton, Maine.

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The Journal of the Maine Medical Association

Volume Forty-Three

Portland, Maine, February, 1952

No. 2

OLD AGE

GEORGE J. ROBERTSON, M. D., Waterville, Maine

Old age has no exact moment of onset. Some people are old at forty; others, young at eighty. It is the physiologic rather than the chronologic age that is important. Korenchevsky considers old age to be a premature condition coming on well before the end of the normal life span which has been estimated by a number of experts to be approximately one hundred years. Our problem medically then is to see that people live to this expected life span, but of more importance is to see that they live a healthy and happy old age.

The statistical importance of the old age group is evident. In the past fifty years the average life expectancy of the American people has increased from $49\frac{1}{4}$ to $67\frac{1}{2}$ years. Today one out of every twelve persons in our country is over 65. By 1975 this number will soar to one out of every nine. The increase in average life expectancy has not been associated with a proportionate increase in working life expectancy. The gap between retirement and death now stands at $5\frac{1}{2}$ years. This is about double the length of that in 1900 and by 1975 it will be tripled.

The sociologic aspects of aging are twofold: first, personal and second, social. The speed with which old age overtakes us leads to a marked unpreparedness in every aspect of economic, social, and personal life. The heaviest burden of all the aspects is being borne by the family. Families may now encompass three, four, and five generations, and this is making inroads on the institution of the family by endangering the ability of the individuals to maintain essential

affectionate ties. In other words, more and more pressure is being placed on the younger folks for the care of older people. These younger folks cannot begin to carry that responsibility if they are to meet adequately the demands of their own wives and children. This threat to the family is a grave sociological problem. Part of the family problems arise from the difficulty of financial support for older people through an ever-extending period of life, particularly when opportunities to work or for hire are denied them on the basis of chronological age, the legislatively established old age of 65.

Beyond the re-organization of business and industry, there must be similar re-organization of other social institutions such as the school, the church, social services, civic and governmental units. The school system must eventually adjust to a gradually decreasing number of young people. Simultaneously it must adapt its curriculum to prepare pupils for a lifetime at least a third or a half longer than that for which students were once prepared. It is imperative that courses for adults be given a place in any community system of education which the size of the adult population deserves. Family agencies must discover what effect the presence or absence of older people in the family has on the family. This is especially indicated since, in spite of the seeming instability of the family, we are still led to believe that it is the place most conducive to the maintenance of emotional and mental balance for the general run of individuals.

With the rapid strides of business and industry

and the drives for improved working conditions, more leisure time has accrued to all members of society. This presents the country with a challenging paradox. The efforts to achieve shorter working days and weeks by the younger segment of the population have been counter-balanced by the intense dissatisfaction of many oldsters who find themselves committed to a life of leisure and, for far too many, one of idleness and boredom.

Industrially the problem of aging falls into two categories. The first concerns men who are at or near the so-called retirement age of 65 and presents this problem: Can we keep these men in the nation's manpower pool? The second is: Can we prevent the nation's workers from falling prey to the diseases of old age so that they can look forward to longer years of health and productive labor?

Many industries are dealing with this problem and such companies as the Consolidated Edison Company of New York are retaining able workers over the age of 65. This company has a retirement panel to review each worker coming up for age retirement on an individual basis with the purpose in mind of continuing in industry, beyond this age, workers who are physically and productively able. The panel determines whether a worker will be retained or retired on the basis of an efficiency report submitted by the worker's department and a report on the employee's health status submitted by the medical department. The fact is widely recognized that it is not a worker's chronological age which necessitates his retirement at 65 but rather the physical disabilities which normally accompany advanced age. Medically we should aim to free workers from these disabilities. Such a program would be rehabilitation of workers with chronic disease such as heart disease, hemiplegia, arthritis, and tuberculosis. Very worthwhile results have been obtained by the retaining of workers handicapped by amputation, deformities of limb, loss of vision, as we all know, and there is no valid reason why there could not be similar industrial rehabilitation of workers disabled by chronic disease.

I was recently asked to give a report to a company on this case. A laborer, at the age of 64, while pushing a wheelbarrow up a ramp, had a rupture of a plantaris tendon. He reported to the company physician and was treated by diathermy at the mill every other day. At the end of a month's time the leg had not materially improved and the patient had the sudden onset of severe chest pain for which he was hospitalized. There the diagnoses of coronary thrombosis, pulmonary infarction, and thrombophlebitis were made. The patient made a slow recovery and finally requested a return to work. The company did not want to have him return to work on the basis that he had had a coronary and could no longer do his job which requires physical effort, and made the plea that

the coronary thrombosis was not related to the employee's injury. There was no doubt that a normal heart would not have sustained a coronary thrombosis as the patient's did and that this patient must have had underlying arteriosclerosis. Admitting this, however, there seemed little doubt that the sequence of events, starting with the injury, led to this patient's illness. The patient had recovered to some extent, was poor, and in need of gainful occupation, and certainly industry has an obligation to that patient and should be able to find gainful use for him.

The second and larger phase of long-run industrial health programs would be concerned primarily with the detection and prevention of diseases which would shorten work life expectancy. Cancer is but a small factor in causing disability in industry. Heart disease is the primary enemy of the older worker and it is against this malady that our greatest efforts must be expended. In review of 1,821 cases of heart disease among 25,000 employees in one company, it was found that coronary artery disease, high blood pressure, and arteriosclerosis accounted for nearly 90 percent of the cases. An adequate program of preventive medicine on the part of industry can save many of its employees from the crippling effects of such ailments. Such a program might have as its foundation a periodic examination beginning at, say, the age of 40.

Multiphasic screening techniques are now employed by many industrial units and certainly are worthwhile as a preventive step to eliminate from further examination those employees who have normal findings and should result in a great saving of time and money, for periodic examinations by the physicians are time-consuming. The multiphasic screening tests usually consist of a blood pressure reading, weight, urinalysis, blood serological test for syphilis, hemoglobin determination, electrocardiogram, and chest X-ray. However, no mechanical device can replace the clinical acumen of the examining physician and multiphasic screening tests overlook the personal equation of the doctor-patient relationship. If a multiphasic screening technique were used, a complete periodic examination and interview should be accomplished in about twenty minutes. Using such a technique the physician would have time to impart advice on errors in diet and habit which seem to be related to degenerative disease. Although health education without a personal physical examination has been proven valueless, an examination with no explanation or advice to the employee involved also is without value. Health counselling must be the core of the periodic examinations.

Associated with diseases of the heart, blood vessels, and cancer, the psychiatric aspects of oldsters are extremely important. The transition from physiological to pathological age is of course influenced by many factors besides years. Although certain psycho-

logical problems are common to all who reach old age, it is indeed fortunate that the overwhelming majority of the aged maintain their mental faculties to the full. In a study of 477 individuals living in one community, Post found that 81.8 percent were mentally normal and of the remaining 18.2 percent, 14.4 percent showed borderline changes in their mental functions and habits. Only 3.8 percent showed evidence of definite psychiatric disability. In this country more than any other the growing preponderance of aged individuals in the population has been reflected in increased demands on psychiatry hospitals. About one-third of the patients currently being admitted to state mental hospitals are over 60 years of age. About 40 percent of patients admitted to mental hospitals at present have senile psychosis or psychoses with cerebral arteriosclerosis. Not all aged patients with these two most common psychiatric diagnoses automatically require commitment. Where there is inadequate provision for the care of elderly patients in the homes or communities, institutionalization is sometimes employed for nothing more than mild confusion, memory impairment, and physical infirmity. Thus the reason for hospitalization is often primarily sociological rather than psychiatric. There is no doubt that the number of aged now being committed could be reduced by intelligent social planning.

The personality changes of aging should be known. Many elderly persons are unnecessarily alarmed and have an old age complex similar to the paralyzing effects seen in cancerophobia and are found in many who are not otherwise neurotic and could be alleviated by clearer understanding and acceptance of the personality changes to be expected. The more characteristic personality changes are as follows:

1. An increased conservatism in mental outlook.
2. Exaggeration of life-long character traits, of opinions, biases, and prejudices.
3. Progressive loss of interest in new things and new situations.
4. Disinclination to form new habits and associations.
5. Impairment of memory for recent events with ease of recall of past memories and indulgences in reminiscence.
6. Decreased span of attention, lessened capacity for mental work, with greater fatigueability.
7. Slowing in speed and diminution and lessening in accuracy of thought. There are some special conditions accompanying advanced age which predispose to psychogenic disorders of varying degree, even in individuals of relatively stable make-up. The most important of these are concern over health, worry over finances, loneliness and fear of not being wanted, feelings of having outlived one's usefulness, and fear of losing the place formerly enjoyed in the community.

We all know and pay much attention to the rejected child. Here the situation is obvious. The rejected adult, however, is with us. Lifelong mates die, children marry and go on to lives of their own, leaving many an older person to himself, a true reject. In these people, we often see grief reactions. They may manifest themselves as depression, somatic symptoms to draw attention and sympathy, or they may lead to overstress of some mild organic complaint.

I have recently seen a patient with coronary artery disease accompanied by chronic disease of the lung under good control. The patient was still complaining of symptoms. These symptoms required seeing me frequently and also, as I noticed, brought his family, his children, solicitously about him—an example of a reject who uses his symptoms to bring his family back.

The person who is unprepared for old age and who loses his family through death and marriage is a likely candidate for such symptoms. Even when personality changes of old age are accentuated as the result of structural organic change, the capacity of the individual to adjust is often more directly related to his cultural, economic, and family problem than to demonstrable pathologic changes. Frequently the cerebral impairment is the least important factor requiring psychiatric treatment.

Some of the common evidences of deterioration are: definite memory failure with confabulation, apathy, aberration of talk, poverty of speech, loss of interest, dislike of new things, diminished capacity of self care, neglect of personal appearance, pathological emotional reactions on distress, and asocial behaviour outbursts. None of these disturbances, with the possible exception of the last, must lead inevitably to commitment.

The first steps toward the goal of healthy transition from middle age to a balanced old age will be attained when there is better understanding of the normal physiology and psychology of aging and if there is a greater appreciation of the need for the aged to continue useful interests and activities, and if the aged are given opportunities to maintain an adequate social life and a useful place in a community.

The medical diseases of the aged have been slightly touched upon and it has been seen that the two of importance are cardiovascular disease and cancer. Of these two, cardiovascular disease is the overwhelmingly more important.

Many of the changes which have been assumed to be a part of the picture of old age may in reality come from poverty and inadequate diet. The elderly person, even when obese, is frequently malnourished. Many factors may contribute to this, including long continued unbalanced diet, mental or emotional stress, gastrointestinal disease, poor teeth, ill fitting dentures,

reduced muscular activity, and poor economic situation. In patients suffering from chronic debility, the total intake of calories is often far below accepted standards, even though an adequate diet may be available. The provision of a diet high in vitamins and essential minerals is essential. The protein requirements of the aged are higher than those of younger adults. It seems likely that a satisfactory allowance for the aged should be about 1 gram of protein per pound of body weight. A moderate allowance of alcohol may be valuable, supplying calories, relaxing tension, increasing appetite. It is important that the small appetite of the elderly be not further lessened by unpleasant surroundings or by unattractively served food.

Much research has been devoted in the past few years to the causes of arteriosclerosis. The role of blood fat has seemed important and diets which are low in fat, plus the use of agents which tend to mobilize fat, are in use at the present time, in hope to avoid the progress of arteriosclerosis, and in some cases, to diminish evident arteriosclerosis. It is too early to state their usefulness but the problem of arteriosclerosis, which underlies the vascular diseases of old age, is not an insurmountable one. Practically we can state at the present time that obesity must be avoided and that diet low in fat, high in protein, vitamins, and minerals is advisable.

Periodic physical examinations, an awareness on the part of the physician of the problems of the aged, will lead to a happier and healthier old age. The community, social agencies, the family, the individuals, must be made aware of the increasing need for old age awareness. Many industries are having preretire-

ment discussions and retirement discussions and retirement training programs. Doctors have a responsibility in pointing out to their patients the necessity of preparing for old age. This cannot be overstressed.

We have one patient who comes promptly to mind when preparedness is discussed, a 57-year-old executive with Meniere's syndrome. Study revealed arteriosclerosis, obesity, and emotional instability. He also had gouty arthritis and chronic auricular fibrillation. Vacations, periods of rest, had been recommended by previous physicians, but he failed utterly in them, returning to work after two days of idleness. A nervous man with much drive, successful, all his energy centered about his work. Soon body disease or retirement age will be with him and take him from his work. Discussion of his future has taken place and it was found that he looks forward with dread to life without his work. Attempts at correction of this attitude have been made and he, along with his wife, is now giving some thought to his future years.

Physicians in private practice must heed the problems of the aged who will gradually compose a larger portion of their practice. Geriatric clinics should be included in the clinic program of hospitals.

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Manual on Blood Program. The Civil Defense Administration is preparing a technical manual on the entire civil defense blood program and expects to have it available shortly after the first of the year. CDA said the publication has the concurrence of the American Medical Association, American Hospital Association, American Association of Blood Banks, Association of State and Territorial Health Officers, American National Red Cross, National Research Council, U. S. Public Health Service, Department of Defense and Office of Defense Mobilization.

CDA made the announcement in connection with a recommendation that communities consider a selective blood-grouping program to build up a reserve of volunteer group "O" donors rather than a mass blood grouping. Some of the reasons given are as follows: 1. There is no certainty that blood-group identification will be available when a transfusion is needed.

2. An attempt to give specific blood-group transfusions during the first 24 to 72 hours following attack would complicate greatly the supply problem for first-aid stations and emergency hospitals. 3. Group "O" blood transfusions can be done successfully without crossmatching. 4. Mass grouping programs should be undertaken only if surplus funds remain after procurement of essential medical supplies.

Identification cards or tags should be issued to a reasonable number of voluntary group "O" donors and a roster of emergency donors should be maintained at places outside target areas, CDA advises. In this way, communities close to target area cities can be prepared to provide at once a supply of "O" blood sufficient to meet initial blood transfusion needs in the first hours after enemy attack. *J. A. M. A.*, 11/24/51)

THE PIGMENTED NÆVUS OF THE CONJUNCTIVÆ AND ITS IMPORTANCE TO THE INDIVIDUAL*

RICHARD H. DENNIS, M. D.

¶ [The increasing frequency with which small pigmented naevi of the conjunctivæ have been seen in the past year would seem to make worthwhile a brief résumé of the importance of recognizing and treating them. The fact that they occasionally can become malignant is sometimes overlooked and the lesion may not be excised or at least kept under observation as it should be.]

¶ [Not infrequently the patient may never have noticed the lesion. On the other hand, when attention is drawn to an eye due to some accident to it, the presence of the naevus becomes known and the patient may erroneously feel that it appeared suddenly.]

¶ [Clinically the naevus is recognized as a heavily or lightly pigmented area of the conjunctiva. The usual site is at the limbus where the epithelium of the conjunctiva undergoes transition to a corneal structure. Such "areas of strain" are frequent sites of aberrant tissue growth. Less common sites are the bulbar conjunctiva—near the inner canthus and on the conjunctiva of the lid. When at the limbus, the pigment may invade the cornea, usually remaining in the anterior layers.]

¶ [The pigment in a naevus may vary in amount and distribution. There may be little or no pigment and it looks yellowish. Usually it is in the form of a fine dusting of melanin granules throughout the lesion. However, it can be much more dense, appearing to be in dark, scale-like formation. Under the magnification of the slit lamp, it may be seen that the pigment is usually unevenly spread, and is in the conjunctiva or just beneath it. Sometimes in a deeply pigmented lesion, it is difficult to be sure, even with magnification, that the pigment has not invaded the sclera itself. Some authorities, like Berliner,¹ feel that most naevi are vascularized. However, he points out carefully that the vessels do not bud out in little tufts when it is benign, whereas they do when it is malignant. Occasionally one sees cystic areas within the naevus, especially if there is only delicate pigmentation.]

¶ [It is now generally agreed that the pigmented naevus is of neuroectodermal origin and is "associated with the terminal neuro-apparatus,"² in contrast to older conceptions. The basic histological structure is the dark naevus cell full of melanin and equipped with projections like pseudopods. They are usually located between inward prolongations of surface epithelium. Pigment granules may also be found outside the cells, in the epithelium and surrounding connective tissue structures.]

¶ [The actual importance of these pigmented spots is that they occasionally become malignant. Though this is usually spontaneous, it has followed trauma or even superimposed conjunctival infections as in a case of Kochs-Week conjunctivitis, reported by Rosenstein in 1925.³

¶ [The usually accepted clinical criteria for development of malignant tendencies are sudden increase in size, increase in pigmentation, in elevation of the lesion, or subjective signs of inflammation. Enthusiasts of the slit lamp like Vogt and Berliner feel that it is possible to distinguish some of the properties which make a naevus a malignant one. Berliner places great stress on the sudden appearance of neo-vascularization. By this he means that new small buds or tufts appear within the groups of naevus cells—an actual new growth of vessels. He cautions us not to confuse mere inflammatory vascular dilatation even though prolonged, with neo-vascularization.]

¶ [The histological evidence of malignancy is, of course, the most reliable and consists of atypical cell growth, mitotic figures, and evidence of active invasive growth.]

¶ [Treatment should be instituted before the naevus reaches a stage where it begins to show suspicious changes. Recognition of the lesion and its potentialities are important, as without it proper treatment cannot be instituted. According to most authorities,^{2, 4, 5} the best course to follow is to excise the lesion widely with a goodly portion of the surrounding conjunctiva and cornea if necessary in order totally to remove the pathology. Verhoeff⁶ advised that removal include even a portion of the ciliary body if necessary.]

¶ [This is usually all that is done until a microscopic examination is completed. However, some men have advanced the opinion that irradiation could advantageously follow the excision.²]

¶ [If pathological examination reveals malignancy enucleation or even exenteration should be carried out.]

¶ [Only one of the cases in our files showed a pathological diagnosis of malignancy. Enucleation was not allowed but the patient had no recurrences up to eleven years later.

¶ [However, Smith,⁷ in 1934, reported a case in which a simple pigmented naevus was removed. A malignant tumor appeared later and was removed, but it recurred. Radium treatment was done to both the lesion and regional nodes to no avail. The patient died of brain metastases seven years after the first lesion was seen.]

* From the Thayer Hospital.

Summary: The importance of recognition and prompt treatment of simple appearing pigmented lesions of the conjunctiva is stressed.

A résumé is made of the etiology, clinical appearance, and treatment.

Case records of some typical cases are appended.

Case #1—T.P. Patient came in for refraction. He was found to have limbal pigmentation of the left eye at "3 o'clock." It was removed. Pathological diagnosis: Hyperpigmentation.

Case #2—W.C. This patient came in because of a spot on the right eye which had grown rapidly in the last month. A densely pigmented lesion at the limbus was excised. Pathological diagnosis: Pigmented naevus.

Case #3—G.P. Patient came in because of conjunctivitis of three days' duration. A limbal pigmented lesion was seen and removed. Pathological diagnosis: Melanotic naevus.

Case #4—G.DuB. Patient was sent in by a physician who noted a pigmented lesion on the right eye. He thought it was increasing in size. The lesion was at the limbus and was removed. Pathological diagnosis: ? Melanoma, probable pigmented naevus.

Patient has been followed one year and there has been no recurrence.

Case #5—W.G. Patient came in because of inability to read. During routine examination a pigmented lesion 4 mm. from the limbus was seen. It was removed. Pathological diagnosis: Benign melanoma.

Case #6—G.B. Age 68. Patient came in because of a foreign body sensation of the left eye. A pigmented lesion at the limbus was removed.

Pathological diagnosis: Malignant lesion.

Patient refused further surgery. Eleven years later there was no recurrence and vision was 6/6 in both eyes.

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A RATIONAL APPROACH TO ALLERGIC HEADACHES

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The allergic headache is probably the one type of functional headache for which there is a specific cure. The problem of headaches in general is of major importance because of the frequency with which it is the presenting complaint of the patient, and because it is a common cause of recurring disability. The usual classification of headaches may not be too helpful in thinking through a differential diagnosis, since there is little scientific basis for the breakdown in the large group of functional headaches. The result is that the patient's description of his affliction, or findings on examination, may lend themselves readily to classification; but the final category selected may not carry with it any suggestion for definitive treatment.

Most cases of organic headaches, on a specific basis, such as acute infection, trauma, vascular accident, neoplasm, refractive error, are readily recognized. Objective findings are invariably present if looked for. Headaches in this group that evade detection after careful investigation are, statistically at least, rare. Frequently there are corroborative objective findings, such as cervical arthritis, hypertension, hypoglycemia, or manifest nervousness, without there

necessarily being any clinical relationship between the sign and the symptom. For instance, in discussing the allergic basis for migraine, Moench¹ is of the opinion "that the precipitating factor is often food, although contributory factors, such as menstruation, are important."

The remaining cases of headache are likely to be on a functional basis. Some of these may have an obvious cause, but not an obvious cure; and often are correctly diagnosed by the patient who is seeking relief. These are the patients who, for instance, may be exposed to offensive occupational fumes or glaring lights. There is finally a large group of patients with headaches on an obscure basis. At this stage in the differential diagnosis the physician might do well to dispense with descriptive terms that may tend to confuse the case at hand. The terms migraine headache or histamine headache may satisfy the physician's curiosity regarding the mechanism of the headache; but having arrived at this conclusion neither the physician nor the patient is likely to feel much better. In classifying these cases the physician is often committing himself to a course of treatment that aims at reversing or correcting an autonomic imbalance. In

* From the Thayer Hospital.

our present state of knowledge this is not very often successful, it is likely to be interminably prolonged, and it is seldom if ever preventative. It is true that the term "allergic headache" is also descriptive of a mechanism; but at least the treatment is inherent in the diagnosis.

The suggestion is urged that in the differential diagnosis of headaches, an allergic basis should be considered. Richard A. Kern,² makes this statement: "The central nervous system provides one of the commonest of allergic symptoms: headache. Allergic headaches are of the most varied kinds, ranging from a dull generalized ache to the severest migraine. But no one kind of headache is exclusively allergic, although migraine, in my experience is oftener so than not." Clues that should make the physician suspicious are first of all, a past history of an overt allergic disturbance, or a strong family history in near blood relations. Inquiries regarding distant relatives are of questionable value. Most productive of results is a detailed inquiry into the patient's history; and leading questions are necessary to elicit evidence of allergic disturbances. The patient cannot be expected to volunteer such significant information as the fact that he repeatedly gets head colds in May, or in August. The important feature of seasonal recurrence has escaped him; but should suggest tree or weed pollinosis to the doctor. It is desirable to use lay terms; many patients who have never had rhinitis or eczema, may have had catarrh or salt rheum. A patient may deny ever having had urticaria or asthma but admit to having a transient itchy rash, or a choking cough when exposed to dust. It is often revealing to inquire if the patient has ever taken any antihistaminics with relief; and it may be necessary to know proprietary names, since "cold" pills these days may very likely be an antihistaminic compound. If other allergic disease can be established, the patient is a good candidate for allergic headaches; and subsequent inquiry can well be directed toward establishing such a diagnosis. It may even be that the patient is aware that a certain food or cosmetic may cause a headache. In such a case it should put the burden on the doctor to prove that other foods or substances are not offensive to the patient; or in fact, that the patient is actually avoiding the irritant that he knows bothers him.

Allergic disturbances are frequently confusing to the extent that there may be multiple causes for a given symptom. The physician who has been disciplined to finding a single cause for a disturbance may be misled. If the complete avoidance of a known offending food does not relieve the headaches, then other foods should be sought for, rather than another basis for the headaches. Furthermore, negative skin tests do not rule out the possibility of allergy any more than a chest examination can rule out pulmon-

ary disease. It is not so much a question of interpreting skin tests, as it is a question of evaluating the validity of the procedure in a given case. Tests for certain disturbances such as hay fever, and with certain allergens such as epidermals, show a favorable incidence of correlation with the clinical picture. On the other hand the skin of aged people makes them poor subjects, and foods are poor materials, for testing; and equivocal results have led to the misconception that allergy could not be a factor in a given case. Skin tests, at best, can telescope a long period of observation and trial and error therapeutics; but they cannot prove anything not otherwise demonstrable clinically.

Other investigative procedures should include a nose and throat examination by an experienced observer. The nasal mucosa may be typically pale and boggy; but more moderate changes are difficult to recognize. The presence of eosinophiles in a nasal smear is good evidence of a local allergic disturbance. Sinus X-rays may show an edematous membrane. It must be borne in mind that these may be transitory changes, present only for a variable length of time following exposure. It may, therefore, be desirable to examine or X-ray the patient when symptoms are present, or following an attempt to produce changes by provocative testing.

³ "Fully more than 50% of cases referred (to an otolaryngologist) with symptoms of sinusitis have proven allergic in origin. Similarly a surprisingly large percentage of cases complaining of headache and for which no presenting cause could be found have shown evidence of allergy or at least autonomic dysfunction. A very large number of cases of otitis media with effusion, other than those obviously following acute colds, will show eosinophiles in the secretion of the middle ear, and must be considered allergic." In an unselected group of such patients complaining of head pain, approximately half had headaches on an allergic basis. The word "unselected" is used advisedly inasmuch as most of these patients constituted a selected group of the referring physician's cases of obscure headaches. They invariably had the benefit of a previous office history, examination, plus other more extensive procedures. The patients originally had been referred with a question of chronic sinusitis, or they were seen with the request to rule out sinusitis as a cause of their pain. The most common complaint was a stuffy nose and post nasal discharge.

In a consecutive series of 137 patients seen because of various allergic disorders, thirty-two complained of headaches, and twenty-two of these were on a proven allergic basis. Of those cases in which the cause could not be demonstrated, many were not adequately followed. Some of these could very well have been allergic in origin, since all of these patients had

other allergic disorders. The offending agent was invariably a food. In discussing histamine headaches, the statement was made that "a definite relation to some allergenic substance—almost always food—can usually be established."⁴ Patients often diagnose their condition correctly when the food is eaten at widely spaced intervals. However, the foods most frequently at fault are those commonly eaten, such as milk, wheat, eggs, chocolate, nuts, and cereals. With surprising frequency it was found that headaches were due to foods that the patient "did not eat." That is, the patient did not drink whole milk, or eat whole eggs, but ate many prepared foods with these ingredients. It is likely that the patient at one time associated some discomfort with the given food; learned to avoid it; and with passing years forgot why he originally acquired the distaste. The corollary to all this is that the physician should harbor considerable suspicion toward any common food that a patient avoids. In trying to evaluate the food factors, it is, of course, necessary to take a detailed dietary history. It goes without saying that the patient's answers to general questions are often unreliable. Patients rarely have occasion to analyze their own diets, infrequently know the ingredients of mixed or prepared foods, and have no reason to attempt to correlate their headaches with their food. The patient who knows that too much candy causes a headache, may still be eating chocolate pudding; another who has learned to avoid wheat may be eating rye bread which contains about 50% wheat flour. And, finally, since allergic patients unquestionably have a varying tolerance for offending agents, we have tried to make a diagnosis by provocative tests when practicable.

SUMMARY

It is urged that an allergic basis be considered when treating a patient with functional headache. The jus-

tification for this is that the treatment for functional headaches in general is not very satisfactory. If it is possible to establish an allergic cause, then specific treatment can follow. Since headache is a symptom that cannot be evaluated objectively, the diagnosis must be made by inference and confirmed by specific avoidance therapy and provocative testing. Various clues from the history, physical examination, and laboratory studies are offered that should suggest the possibility of allergic headache.

CONCLUSION

A rational approach to chronic head pain could be the following procedure:—

1. First consider organic disturbances with any element of danger.
2. Then consider organic disease for which satisfactory treatment is available.
3. Consider functional disturbances as a whole, without too much attention to descriptive terminology.
4. And finally, if there is any suggestion of allergic disease, and the headaches are not otherwise responsive to treatment, then that patient deserves the benefit of allergic investigation, in consideration of the fact that specific treatment can be offered.

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Maine Medical Association Review Committee on State Aid Cases. At a recent conference between officials of the Department of Health and Welfare and committees of the Maine Hospital Association and Maine Medical Association on State Aid Cases it was agreed that the Maine Medical Association should have a committee of three doctors, who would act as a board of review to advise the Department in unusual cases usually of chronic or long term illnesses. President Jameson has appointed to the review committee, Frederick T. Hill, M. D., Waterville, Chairman; M. Tieche Shelton, M. D., Augusta; and Paul D. Giddings, M. D., Augusta.

Mutual Understanding Key to Best Medical Care—As you know, the best medical care is based on friendly, mutual understanding between physician and patient. The American Medical Association has designed an attractive new plaque for display on your office desk or wall. This plaque is an invitation to your patients to talk over questions of professional services and fees. You may secure one of these plaques for one dollar from the Order Department, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

THE DIAGNOSIS AND TREATMENT OF OTITIS MEDIA

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Acute Otitis Media

There have been definite and considerable changes in the status of the treatment of otitis media in the past few years which merit attention from the general practitioner.

There are two forms of acute otitis media; the catarrhal form frequently undiagnosed for lack of symptoms, and the purulent form usually manifested violently to both the patient and the physician.

Etiology

The etiology of both forms of acute otitis media in young people and adults is fundamentally the same. It is simply eustachian tube obstruction. This interference with proper ventilation of the middle ear may arise from many sources, most common of which is edema of the nasal mucous membrane which also involves the mucous membrane of the eustachian tube itself. The edema may be the direct result of an acute upper respiratory infection or it may be the result of allergic rhinitis which involves the mucous membrane of both nose and eustachian tube. In infants and children probably the most important single obstruction is the adenoid which acts in two ways to produce interference with tubal drainage. It mechanically occludes the eustachian tube on the one hand and provides a nidus of recurrent upper respiratory infection on the other. Flying has long been known to produce an acute "aero-otitis media," which is merely the catarrhal form of acute otitis media, but brought on suddenly with a resulting acute picture not commonly seen in the more slowly developing catarrhal form of

the disease. In some instances, it is doubtless true that blowing the nose causes pus to pass up the tube resulting in an acute purulent otitis media.

In infants, acute middle ear infection may arise for additional reasons. The eustachian tube is short and wide open in the infant, lacking the tortuosity of the adult tube. Direct extension of nasopharyngeal infection into the middle ear commonly occurs. In children fed from a bottle while lying flat, it is not uncommon to find otitis media resulting from milk which enters the nasopharynx and is forced up the eustachian tube by the swallowing mechanism, producing milk otitis.

Diagnosis

The differential diagnosis of these two diseases is relatively easy and usually will be indicated as the result of a careful history. In both instances the patient complains of recent upper respiratory infection. The important characteristics of the catarrhal form are deafness, a heavy feeling or a stuffiness in the ear, tinnitus, and reverberation of the patient's own voice. The tympanic membrane is slightly reddened, either retracted or full, and sometimes a fluid level of clear serous fluid may be seen through the tympanic membrane. The acute purulent otitis media is characterized by pain, deafness, headache, and sometimes, discharge. The pain is frequently excruciating, the tympanic membrane fiery red and often bulging. In those cases in which the tympanic membrane retains some transparency, purulent fluid may be clearly seen in the middle ear.

	<i>Catarrhal</i>	<i>Acute Purulent</i>
History of Upper Respiratory Infection	yes	yes
Pain	mild, if any	severe
Deafness	moderate	severe
Tinnitus	yes	no
Reverberation	yes	no
Tympanic Membrane	Normal color—either bulging or retracted	fiery red—usually bulging
Fluid in Middle Ear	clear	purulent

Bacteriology

The bacteriology of acute otitis media is, in general, that of the acute respiratory infection which is in progress in any given area at any particular time. When the ear becomes acutely infected, it is usually merely the result of extension of nasopharyngeal in-

fection up the eustachian tube. Cultures taken from such ears are often found to contain pure cultures of streptococci, pneumococci, and staphylococci. The importance of accurate differentiation of such organisms is much less now that we have the broad spectrum antibiotics with which to treat such infections. In former years, when the osteolytic pneumococcus Type III, often known as streptococcus mucosus cap-

* From the Thayer Hospital.

sulatus, was rampant, early identification of the organism coupled with early surgery was of prime importance. Today, the necessity of cultures is felt only in those cases where therapeutic response is unduly slow or in rare complicated types of cases.

Treatment

The treatment of acute otitis media is directed at reversing the pathologic process which has produced the disease, together with management of the infection being treated. The use of vasoconstricting nose drops is definitely indicated to relieve nasal congestion and thereby reduce at least part of the mechanical obstruction to the eustachian tube. If the tube is obstructed and either purulent or serous fluid has accumulated in the middle ear an incision should be made in the tympanic membrane and the fluid allowed to escape. The use of paracentesis of this sort allows adequate egress of transudates and exudates until such time as the eustachian tube returns to its normal functioning condition. In addition, this procedure also relieves much of the pain of purulent infections and part of the deafness and discomfort noted in catarrhal effusions. A properly performed paracentesis should in no way adversely affect the hearing of the patient.

Antibiotic therapy is of prime importance in the treatment of this disease, but it must be given in strict accord with accepted criteria for such therapy in other infectious diseases. In the first place we have seen that acute otitis media is an infection with abscess formation. Thus the usual surgical principles of drainage, rest, and chemotherapy must be complied with. The selection of the chemotherapeutic agent should be made on the basis of the sensitivity of the organism involved; and, ideally, cultures with sensitivity tests should be made of each case. In many areas where this is impractical, the choice of antibiotics must depend on the clinical experience of the physician handling the case. If the complications of a given flareup of upper respiratory infection in a given area are being especially well handled by a particular antibiotic, the chances are that it will also take care of the ear infection which complicates that same epidemic. One feature of interest which has developed from the frequent sensitivity tests made at the laboratory of the Thayer Hospital this fall is the fact that almost all of the organisms isolated from upper respiratory infections are most sensitive to terramycin, secondly to aureomycin, and chloromycetin, and least sensitive to penicillin. These tests are made as comparisons of the effect of the different antibiotics upon a given culture of organisms, and are not absolute tests. Thus, the fact that the organism is most sensitive to terramycin does not necessarily prove that it would not be adequately treated by penicillin in therapeutic doses.

Complications

The common complications of acute otitis media are of particular interest and must be borne in mind, even today when the treatment of this once dread disease has become a rather commonplace form of therapy. Natural progression of the infectious process which involves the middle ear is by direct extension into the mastoid process with subsequent acute mastoiditis. This sequence of events is not particularly common today except in cases of acute otitis media which are treated inadequately by small amounts of antibiotic and/or by lack of adequate drainage of the abscess cavity. These are, fortunately, uncommon, but represent the major number of cases of acute mastoiditis seen today. Chronic perforations of the tympanic membrane with resultant chronic otitis media are quite commonly seen in those cases where the middle ear has not been drained surgically but in which the tympanic membrane is allowed to rupture spontaneously. These ruptures oftentimes take place in the flaccid part of the tympanic membrane, or in marginal areas with the result that a persistent perforation persists, leaving open a pathway to subsequent infection.

Hearing impairment as a complication of acute otitis media is rather common and may occur in any one of several ways. The development of a chronic perforation of the tympanic membrane, with chronic otitis media, is one of the frequent causes of impaired hearing. In some instances, especially in cases where the tympanic membrane neither ruptures nor is incised and the infection heals up with chemotherapy, there is exudate into the middle ear which has not drained adequately through the eustachian tube. Organization of the exudate may occur with the development of adhesions which impair the mobility of the tympanic membrane. In most instances, lysis of these adhesions is not practical. In all probability, hearing impairment of this sort represents the most completely overlooked complication of the treatment of acute otitis media.

The rare complications of acute otitis media consist of such conditions as lateral sinus thrombosis, meningitis, brain abscess, facial paralysis, petrositis, and the systemic complications of bacteremia. These fortunately are uncommon today, and with the continued and skillful use of antibiotics they should rarely be seen.

Chronic Otitis Media

The chronic form of otitis media is, by all standards, the most inconveniencing and the most disabling, as well as the most dangerous. It is also from chronic otitis media that most of the serious complications arise.

There are several forms of chronic otitis media, and the prognosis of the disease varies directly with the particular variant of the disease. Accurate differentiation of the types of tympanic membrane perforations is absolutely essential to proper prognostication regarding the various types of chronic otitis media. A marginal perforation is, by definition, any perforation which borders upon the periphery of the tympanic membrane, is located at any point in pars flaccida or Shrapnell's Membrane, or has part of its margin upon an ossicle. A central perforation is any dehiscence in the pars tensa of the tympanic membrane which does not involve the periphery of the membrane or border upon the ossicles. Much more ominous complications arise as a result of marginal perforations, as a rule, than as the result of central perforations.

Etiology

The etiology of chronic otitis media includes a number of well known entities. Residual infection from acute otitis media is a major factor. Permanent perforations of the tympanic membrane which result largely from spontaneously ruptured membranes are another important cause, in that they allow dirty water to enter the middle ear through the external auditory canal. These, coupled with persistent nasopharyngeal infections, chronic sinusitis, allergic rhinitis, and the inadvertent invasion of the middle ear by external canal epithelium are the major causes of chronic otitis media.

Diagnosis

The first and simplest form of chronic middle ear disease is seen in the patient who has a ruptured tympanic membrane with central perforation (the result of either infection or trauma), with a dry middle ear. This is a relatively benign situation and one which can be expected to give little or no difficulty, unless infection be introduced in the ear, inadvertently, at some time. Such infection often arises from swimming, hair washing, or otherwise introducing contaminated water into the ear.

The ear with marginal perforation of the eardrum, either wet or dry, constitutes a much more dangerous situation, as epithelium of the external canal and tympanic membrane may grow into the middle ear, line it, and by the accumulation of epithelial debris, produce a cholesteatoma. This is potentially dangerous because the epithelialization may extend into the mastoid cavity, or pressure necrosis produced by the accumulating debris may of itself destroy the bony confines of the middle ear. This process is usually secondarily infected and its erosion into dura, lateral sinus, or semicircular canal, may well result in fatal infection. Erosion of the facial nerve may produce

permanent dysfunction of the facial nerve and facial paralysis.

The chronic discharging ear, with either central or marginal perforation, is a considerable annoyance to any patient. It is often dependent upon eustachian tube obstruction for its continuation. In many cases a well performed adenoidectomy or the proper control of allergic rhinitis will result in considerable improvement in such an ear. The danger of this sort of disease is that extension to the mastoid air cells will take place and chronic mastoiditis result.

Bacteriology

The bacteriology of chronic otitis media is quite different from that of the acute form of the disease. Originally, most chronic ears were infected with pure cultures of gram positive organisms, but as the duration of infection continues contamination with gram negative organisms occurs. *Pyocyanus* and colon bacillus are two of the more common organisms. Most chronic ears harbor two or more organisms selected from the list of staphylococci, colon bacillus, *pyocyanus*, *proteus*, diphtheroids and *neisseria catarrhalis*. This is in the chronic form of the disease. When the ear is in the process of an acute flareup it may also contain streptococci, pneumococci, or staphylococci in addition to the less virulent forms mentioned as common contaminants of the ear. The treatment of these organisms is often effectively accomplished by topical ear drops of antibiotics; but in many cases the organisms are so thoroughly disseminated through the mastoid air cells that it is impossible for the antibiotic to reach them and in many instances both topical and systemic therapy are inadequate. They must be treated by adequate surgical drainage to effect cure.

Complications

The serious complications of chronic otitis media are almost all the result of chronic mastoiditis which is the major complication of chronic otitis media. Many of them arise as the result of erosion of the mastoid bone by cholesteatomata or by infection. The location of the mastoid air cells in a narrow space contiguous with dura, lateral sinus, semicircular canals, facial nerve, and sometimes carotid artery leaves them in admirable position to cause dissemination of their disease in any one of these directions. Pressure necrosis of the bone by the expanding cholesteatoma or osteolysis of the mastoid process as the result of progression of infection and the growth of granulation tissue are the two most common methods by which such infection is disseminated. If such invasion occurs in the direction of the dura, the progress of events is epidural abscess, dural involvement, arachnoiditis, meningitis, brain abscess. In some instances,

distant brain abscesses are seen without direct connection with the original focus of infection.

If such infectious extension occurs in the direction of the lateral sinus the progress of events is epi-sinus abscess, periphelebitis, phlebitis, phlebitis with thrombosis, propagating either a sterile or a septic thrombus, and lateral sinus abscess. This disease may be complicated by multiple small emboli, bacteremia, or extension of the thrombus, retrograde through the venous channels to involve the cavernous sinus.

When the direction of extension is toward the labyrinth the progress of events is a fistula of the bony labyrinthine capsule noted by dizziness and vertigo on many occasions, sterile labyrinthitis, purulent labyrinthitis, and meningitis. This set of circumstances usually produces a stormy sort of picture which is punctuated by violent vertigo, nystagmus, and vomiting, and is not easily overlooked.

Petrositis is one of the complications of chronic mastoiditis and results from the extension of the infection through pneumatized spaces into the petrous apex, often producing Gradenigo's syndrome, i.e., homolateral temporoparietal pain and abducens paralysis. In many of these cases the localized focus for a recurrent meningitis is found. I have seen one case of recurrent pneumococcal meningitis with eight recurrences of type specific pneumococci which was cured by meticulous exenteration of the petrous apex.

It is clearly seen, then, that the complications of chronic otitis media which are of especial gravity are all complications of the chronic mastoiditis which may develop as the result of acute mastoiditis or of chronic otitis media. The importance of being able to distinguish between potentially serious cases and the benign ones is easily seen. The general practitioner should know the criteria which point to the development of serious disease. In any chronic ear the danger signals should be searched for. These are marginal perforations, dizziness, vertigo, nausea, and vomiting, granulation tissue in the middle ear, severe deafness, continuous discharge, cholesteatoma, acid-fast organisms in the aural discharge, and cancer cells in the aural discharge, or in what is apparently granulation tissue.

1952 Maine Medical Association Dues. Piscataquis County Medical Society, for the fifteenth consecutive year, leads with 100% payment of State and County dues. We want to congratulate the members of the Piscataquis County group and at the same time commend members of the other County Societies on better than average payment of dues. Our records show that receipt of State dues is far ahead of that for the past few years.

If your State and County dues have not been paid—help your County Society reach the 100% mark by sending your check to your county secretary today.

Treatment

Without doubt the best treatment of chronic otitis media is its prevention by properly treating acute otitis media and eliminating the chronic form of the disease.

The major treatment of mild chronic ear disease is directed at maintaining a dry ear. The patient should be enjoined against swimming, cautioned to put a plug of vaselined cotton in the ear when washing the hair, and warned to avoid colds at all costs. When colds do supervene, the nose should not be blown, but the patient should snuff and spit. Vaso-constricting nose drops should be used at this time. The treatment of the middle ear may often be accomplished by regular topical therapy. Antibiotics to control infection, alcohol to reduce the amount of granulation tissue, and mastoidectomy in cases where diseased bone and tissue is inaccessible though the external canal, or in which cholesteatoma has invaded the mastoid air spaces are the usual types of therapy which are utilized. In some of the more complicated cases, careful collaboration between the neurosurgeon and the otologist is necessary to assure proper handling of intracranial complications, as well as satisfactory management of the otological problem.

CONCLUSION

The treatment of acute otitis media is simply the application of the surgical principles, adequate drainage and antibiotics. Application of these principles prevents the complications sometimes seen in inadequately treated patients. Special attention is called to the problem of residual hearing impairment resulting from inadequate drainage of the inflamed middle ear.

The proper management of chronic otitis media is a much more complicated and specialized problem than that of acute otitis media. It is one of the more potentially dangerous infections in the region of the head and neck and is one which should be carefully investigated by means of clinical, X-ray, and laboratory procedures in order to provide an accurate picture of the extent of the disease process.

Art-Hobby Exhibit—1952 Annual Session—The Samoset, Rockland—June 22, 23 and 24. This is a reminder of the Second Annual Art-Hobby Exhibit to be held during the 1952 annual session. It is hoped that members of the Association will bring new projects for display this year, but entries of last year will not be eliminated.

All correspondence relative to exhibits should be addressed to, Mrs. Esther M. Kennard, Maine Medical Association, 142 High Street, Portland, Maine.

THE SURGICAL ASPECTS OF PERIPHERAL ARTERIAL DISEASE*

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The title of this paper encompasses a tremendous amount of material and I hope I shall be forgiven if our attentions are focused on only a few of the many important and interesting phases of these problems.

First let us consider a few generalities which can be applied to the study of all types of arterial disease. History of the patient's complaints will itself give many leads as to the type of disease present.

1. Is there pain? Is it relieved by rest; influenced by position; localized; paroxysmal?
2. Are there color changes in the affected limb; how affected by elevation and dependency?
3. Are there skin changes such as ulceration?
4. Are there abnormal pulsations?

Allen, Barker and Hines,¹ present an excellent and concise method of examination of patients with suspected vascular disease, as follows:

1. Is there swelling, atrophy, shortening or elongation of the affected limb?
2. Are ulceration, gangrene, eczema, or evidence of venous disease found?
3. Is skin temperature normal?
4. Is skin color normal?
5. Are peripheral arterial pulsations impaired?
6. Is there auscultatory evidence of arteriovenous fistula or aneurysm?

If all of these questions may be answered "No," all peripheral vascular disease except Raynaud's disease and erythromelalgia may be excluded. If any of the questions is answered "Yes," further examination and analysis is advisable. We shall consider history and examination in more detailed fashion as we come to the various arterial diseases which we shall be able to consider today.

Certain methods of investigation which contribute to our knowledge of these problems will be enumerated at this time and considered more closely as we move on to definite subject material.

1. Angiography.
2. Oscillometry.
3. Skin temperature studies.
4. Fluorescein test of circulation time.
5. Oxygen content of peripheral blood.

These tests are considered the most valuable of the multiplicity of schemes devised to aid the diagnosti-

cian of circulatory problems as met in peripheral circulatory diseases.

Raynaud's Disease

Maurice Raynaud in 1862 published his first work on a disease characterized by "paleness, coldness of one or many fingers, without appreciable cause," which he stated he hoped to prove to be due to "a vice of innervation of the capillary vessels." He remarked that the more pronounced cases presented pallor replaced by cyanosis with a gradual return to or toward normal and called it a "local syncope or asphyxia." We now recognize that true Raynaud's Disease as later clarified by Lewis and others² is a rare entity, but that a so-called Raynaud's phenomenon of "symmetrical spontaneous gangrene" is quite frequently found superimposed on occlusive arterial disease.

In true Raynaud's Disease, there is a definite sex predilection for females in the order of five or six to one. Its onset is usually seen in the second decade of life and there seems to be a definite hereditary tendency.

Endocrine dysfunction has been suggested as the cause, since attacks have been observed to be more severe at or near time of menstrual function while others have been completely suppressed by pregnancy. Herrmann and McGrath³ and others have reported successful treatment with estrogens. Many of these patients show nervous instability, anxiety, hyperhidrosis and tachycardia, and exposure to cold plays an important role in this disease. Emotional and/or thermal stimulus is thought to produce pallor due to arteriolar spasm in the capillary beds, with the cyanosis due to dilatation of venules, possibly with a reflux of blood into arterioles. The true physiologic reasons for the characteristic changes are even now not clear. Lewis⁴ expressed the belief that the whole process was due to hypersusceptibility to local tissue cooling, with the more severe cases eventually developing intimal thickening and thrombosis. Villaret and his group⁵ felt that the vascular changes were the direct result of many crises of the disease, entirely mediated by the sympathetic nervous system. Since chances to evaluate the pathological changes are very few, as these patients do not die of their disease, presumptions have been made on the basis of arteriographic studies. Some cases have shown absence of filling of the distal parts of digital arteries and decreased calibre of these vessels. Other studies in asthenic young individuals without symptoms of this disease have shown the same findings. We can only say that the true nature of the disease is still not definitely known although in certain cases effective

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treatment has been carried out by attacking the sympathetic nervous system.

The criteria for diagnosis are the history of bilateral spasmodic attacks, brought on by emotional upset or cold, in the absence of other than slight cutaneous gangrene. A second point is that there must be no occlusive arterial disease or disease of the nervous system. Thirdly, the symptoms must be of at least two years duration. The usual complications of this process are mild sclerodermatous changes and perhaps ulcerations of fingertips or toes which may be classed as only "skin gangrene."

Treatment should include general treatment for anxiety state with mild sedation. Instructions as to the use of warm clothing, gloves and proper foot covering are important.

Alcohol by mouth or papaverine hydrochloride intravenously show value during attacks. As tobacco is known to cause vasospasm its use is to be discontinued. Estrogens probably have some value in mild cases. Sympathectomy is almost always effective in involvement of the lower extremities, but much less so when the arms are involved. This procedure must consist of ganglionectomy and trunk resection. Trophic lesions, if present, will almost always be healed following this therapy, but the attacks may not be prevented. In considering drugs, Priscoline is probably the safest since three times as much is necessary to block reflexes and reduce blood pressure significantly, as is required to increase peripheral circulation. Doses of 50-75 mgms. every 3 to 4 hours can be given without great blood pressure alteration.

A Raynaud's phenomenon is most frequently associated with:

1. Trauma.
 - a. Pneumatic Hammer Disease.
 - b. Vasospastic conditions such as seen in pianists.
 - c. With Sudeck's Atrophy after trauma.
2. Neurogenic lesions such as cervical rib.
3. Occlusive arterial disease (Buerger's).
4. Heavy metal or ergot intoxication.
5. Miscellaneous:
 - Scleroderma.
 - Lupus Erythematosus.

Trench Foot, Immersion Foot and Frost-Bite

We shall just mention these results of thermal exposure in passing. All of these conditions exhibit an initial vasospastic, ischemic phase which is replaced as the exposure is ended by a hyperemic phase in which the feet are red and hot, the peripheral pulses bound, and there is no sweating. Unless the feet are elevated and cool environment is established there ensues rapid swelling and blebs may develop. The anesthesia and numbness of the first stage are re-

placed by paresthesias with intense burning. In more severe cases of exposure ulceration and gangrene may develop. Treatment consists of keeping the patient quiet until the hyperemic phase disappears, with the addition of vasodilating drugs and in long-standing cases the judicious use of sympathectomy.

High altitude frost-bite is quite another problem and the analogy is often made that this represents frozen food as compared to cold-storage food, which would be the ordinary type of frost-bite. Because of excessive cold there develops extreme direct and reflex vasoconstriction with marked ischemia, severe anoxemia and tissue damage with the anoxemia being made worse by the decreased oxygen saturation of the air at high altitude. These patients early develop a dry type of gangrene, the treatment for which is only the consideration of the comfort of the individual since a very high percentage will go on to uncomplicated auto-amputation.

Recent work by Shumacker and others indicates the value of sympathectomy even in the early stages of these diseases.

Arteriosclerosis Obliterans (Endarteritis Obliterans)

This condition is defined by Allen, Barker and Hines¹ as "that type of arteriosclerosis occurring in the extremities which ends in progressive episodal occlusion of the arterial lumen." The etiology and pathogenesis are considered the same as those of arteriosclerosis with atheromata in other parts of the body, and all lesions classed as arteriosclerosis have three main components:

1. Changes in the media.
2. Atheromata in intima.
3. Thrombosis.

Atheromatous intimal plaques develop, the bases of which may calcify and cause fragmentation of the elastic tissue of the media with consequent thinning and fibrosis. The atheromata produce some occlusion and may be the starting point for thrombosis. There is probably no significant difference in lesions between the diabetic and the non-diabetic, excepting the added element of susceptibility to infection in the diabetic.

The differentiation from Thrombo-Angiitis Obliterans on pathological observations is on the basis of the three following points. First, the adventitial changes in this disease are limited to fibrosis while in Buerger's disease there is fibroblastic proliferation and periarterial fibrosis. As a second point, the media shows fragmentation of muscle, thinning, fibrosis, hyalinization and calcium deposits as contrasted to the preservation of muscle, but fibroblastic proliferation about the vasa vasorum in Buerger's disease. Thirdly, the intima presents atheromata with lipophages, fat cholesterol and calcification, while Buerger's disease shows simple endothelial proliferation.

Hypotheses as to cause are the same as for arteriosclerosis in other parts of the body:

1. Mechanical—the continuous trauma of pulsation. The legs are more frequently involved due to higher blood pressure. Certainly arteriosclerosis is seen more frequently and earlier in hypertensives than those with normal tension, and perhaps, due to heredity, their tissues do not resist stresses and strains.
2. Metabolic—a disturbed cholesterol and lipid metabolism. Leary has stated that in the pre-insulin era when diabetics were given high fat diets the incidence of arteriosclerosis was remarkably high.
3. Diabetes predisposes to severe and premature arteriosclerosis. In comparable age groups arteriosclerosis is eleven times more common in diabetics than in non-diabetics.

This disease predominates in ages 50-70 with a ratio of six to one of males over females. The essential physiologic disturbance is obstruction of blood flow through the large arteries with resulting ischemia which is proportional to the extent of the arterial occlusion, the most proximal point of occlusion, and the rapidity of development of occlusion.

The symptoms are intermittent claudication, rest pain in digits and feet, dull, worse at night indicating more severe ischemia; ischemia neuritis and burning paresthesias with numbness and tingling; cold sensitivity and occasionally muscle weakness with extreme degree of arterial insufficiency.

Examination reveals impaired pulsations, color changes with redness less marked proximally and postural color changes. Pallor on elevation, rubor on dependency with delay in return of color of superficial veins on elevation is pathognomonic of occlusive arterial disease. When the feet are elevated two minutes and then suddenly placed in dependency the failure of color return in fifteen seconds indicates moderate arterial insufficiency. Thirty seconds means marked insufficiency with sixty seconds an extreme. Lower skin temperature of the affected part, trophic changes such as ulceration, gangrene and infection are frequent. Atrophy of skin, muscle, soft tissues, and osteoporosis, edema and xanthoma are found in prolonged cases.

Special studies consist of X-rays, fasting blood sugar, plasma lipid determinations, electrocardiogram, and record of skin temperatures. With objective evidence of occlusive arterial disease and calcification of arteries found by X-ray the diagnosis is made. Oscillometry and arteriography probably have little value as the diagnosis can ordinarily be made by other and simpler means. In 95% of cases the onset of symptoms of occlusive vascular disease over the age of 50 indicates the condition under discussion,

while the onset of symptoms before 50 will be taken correctly as Thrombo-Angiitis Obliterans. Since this is a progressive degenerative disease the prognosis for an affected limb is poor, but its survival is frequently determined by trauma or lack of it.

Treatment should be directed toward protective measures, such as care of the feet and diet to reduce weight with abstinence from tobacco. Vasodilating procedures, such as warm environment, the use of alcohol, papaverine and Priscoline are of value. For sedation and analgesia, codeine and alcohol have a good synergistic effect.

Buerger's exercises and the use of an oscillating bed are valuable measures. Thiamine chloride, the anticoagulants, oxygen and penicillin are indicated. Gas antitoxin should be given prophylactically whenever it becomes necessary to do an amputation. Sympathectomy is probably of little value unless the patient is under the age of 50. Peripheral sympathectomy of the anterior tibial, soleus, and posterior tibial nerves may be of value. Debridement, with adequately controlled infection, particularly in the diabetic, may avert impending amputation.

Thrombo-Angiitis Obliterans (Buerger's Disease)

This is primarily a disease of blood vessels of the extremities, usually medium-sized vessels such as anterior and posterior tibial arteries, with an inflammatory but non-suppurative panarteritis and associated thrombosis. The lesions are segmental and episodic with resultant ischemia and malnutrition of tissues. It is seen between ages 25-45, almost exclusively in males, and therefore it has been thought by some that the androgens may have a role in etiology and that estrogens could possibly inhibit it. About 25% of cases are found in Hebrews and very few cases have been seen in non-smokers. Is this possibly a vascular allergy to nicotine? Against this idea is the tremendous number of really heavy smokers with no evidence of this disease; therefore, there must be some individual susceptibility to tobacco products. Evidence has been presented favoring a bacterial, viral, fungal origin or products of these organisms but to date this is only suggestive. Edwards⁶ wrote of six cases in females and postulates a rheumatic angiitis of viral origin. Two of these six showed a concomitant rheumatoid arthritis and one had a history of rheumatic heart disease. The symptoms result primarily from impairment of arterial blood supply to tissues and secondarily from local injury or infections of ischemic tissues. Claudication, pain arrest, and sensitivity to cold are most prominent.

Objective evidence includes impaired arterial pulsations, color changes, ulceration and gangrene. Edema and X-ray evidence of osteoporosis are late signs. Color changes are in the order of white blanching on elevation with slow return of color on

dependency, with different color of different digits are a rough indication of the degree of ischemia. These patients then develop rubor and show a slow return toward normal. Superficial thrombophlebitis is a peculiar migrating phlebitis which usually subsides after a few days to recur in some other vein or other area of the same vein. This is seen in about 40% of cases and when seen in association with definite occlusive arterial disease the diagnosis of this disease can be made without reservation.

Special investigations include skin temperature studies to show the relative amount of organic and vasospastic impairments. A fasting patient is left for twelve hours in a 75 to 78 degree F. room with extremities uncovered. A temperature difference of more than 2.5 degrees F. is suggestive of local arterial obstruction. Vasodilating procedures may be tried such as lumbar block, spinal anesthesia, ingestion of ethyl alcohol or Priscoline, to estimate effect of sympathectomy. Fluorescein circulation time is of occasional value. Fluorescein is injected in the antecubital vein and the fluorescence of the digits by ultraviolet light is observed.

Diagnosis is made on the basis of impairment of peripheral arterial pulsations, dry gangrene, of one or more digits without a history of thermal or traumatic injury. Asymmetrical postural color changes, the onset before age 45 and the presence or history of superficial thrombophlebitis are important. This disease can be completely ruled out by X-ray evidence of arterial calcification. In respect to the impairment of peripheral arterial pulsations, it is known that dorsalis pedis anomalies are found in about 10% of individuals. The posterior tibial artery is practically never anamalous.

The therapy of this condition is in great part directed toward attempts to prevent progression. Such patients must be educated as to the true nature of their disease. They should be instructed in protection of the extremities since 50% of the cases of gangrene are directly attributable to trauma. Tobacco constitutes a poison for these patients. Sedentary work when possible, in a warm environment with rest in bed in presence of rest pain and neuritis is advisable. Foreign protein such as typhoid vaccine which produces maximal vasodilatation with a febrile reaction also may relieve pain. Such a substance is injected every other day and the individualized dose is increased by 25% each time to produce a consistent reaction. Heart disease and acute infections are contraindications to this treatment. Postural exercises, the use of alcohol and codeine for the control of pain plus Depropanex, which may have some value in relaxing spasm and controlling pain should also be used. In relation to Depropanex, 5 c.c. dose is given daily for one to two weeks, then twice weekly for the next four weeks, and once weekly for the next month. In

the presence of ulcers or gangrenous lesions, however, this treatment has no value.

Samuels and Silbert suggested the use of intravenous hypertonic sodium chloride. They gave 300 c.c. of a 3% solution in distilled water three times weekly for six months and then weekly for the next six months. Anticoagulants are of definite value. It has been proved by various authors that Dicoumarol in small doses may be used for months without laboratory control and without significant complication. The local treatment of ulcers consists of warm soaks of 1:8000 potassium permanganate for twenty minutes twice daily. A 5% sulfadiazine ointment is applied between soaks. Powdered human red cells are also of value in treatment of ulcers as is penicillin ointment. Alcohol injection and nerve crushing operations are not of value in this condition except in the presence of otherwise uncontrollable pain. Occasionally resort must be had to amputation and when toes only are involved spontaneous slough is allowed. When the feet are involved low amputations rarely succeed and in the presence of such involvement, the two best sites of election are midcalf, and lower thigh. Probably the best test of adequacy of circulation is incision below the knee. With moderate bleeding and healthy appearing muscles of good color, it may be satisfactory to try this site for amputation. Otherwise, an above knee amputation must be done. Sympathectomy has a definite role with the best results being obtained in patients with slowly progressive disease, with mild to moderate rest pain, and only minor ulcers or gangrene. Both sides should be done in two stages. If any given patient has but one limb this procedure is always advisable even though the disease process is mild in the remaining limb. Conversely it also should be done if the disease is severe, since in many cases it is the only hope of preventing the patient becoming a double amputee, even though this hope may be slim. Hamlin, Warren and Kennard and others advocate the removal of the second and third ganglia with their rami. Removal of the first lumbar ganglion may diminish sexual function, particularly when a bilateral procedure is to be done and the patient must be warned of this complication. A good result from sympathectomy should be expected within three months time. The periarterial type of sympathectomy seems to have little place in the treatment of this disease.

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ACUTE HYDRAMNIOS ASSOCIATED WITH ERYTHROBLASTOSIS FETALIS

CLARENCE E. DORE, M. D., and IRVING I. GOODOF, M. D.*

The term hydramnios is used to indicate the presence of excessive quantities of amniotic fluid. The usual amount of amniotic fluid is approximately one liter in primiparae and approximately 1200 cubic centimeters in multiparae. One not infrequently sees some increase in the amount of amniotic fluid, but the presence of severe grades is relatively uncommon. The accumulation of fluid may take place over a considerable period of time or may be more acute, the latter occurring approximately one-fourth as frequently as the chronic type. Generally speaking, the fluid shows no qualitative change from the normal even though present in extreme amounts.

Since it is generally believed that the amniotic fluid is derived from the fluids of the mother through the action of the amniotic epithelium, it is difficult to ascribe an etiologic role to any defect in the fetus. It is not felt that the fetal kidneys take a part in the production of amniotic fluid except under abnormal conditions. Since, however, our general knowledge of the formation of amniotic fluid is defective, the following case is presented to show an association of hydramnios with an abnormal fetus of an erythroblastotic type which was dead on delivery.

CASE REPORT

The patient was a thirty-two year-old woman who was admitted to the hospital because of acute abdominal swelling with difficulty in breathing and inability to move without a great deal of discomfort. Her last menstrual period was eight months before and her pregnancy had been normal and uneventful until two months ago when she began to gain weight rapidly. She was seen one month ago at which time she looked almost full term but appeared to have a great deal of fluid. She returned one week later and in that week had gained eight pounds. The patient was extremely uncomfortable, unable to sleep, and unable to turn over in bed. She had felt no fetal movement for a week and no fetal heart sounds were heard. Since it was felt that the fetus was dead and that the patient had acute hydramnios, she was admitted to the hospital for induction of labor.

The obstetrical history consisted of an incomplete miscarriage four years before with a full term pregnancy producing a live male child one year later. Her periods had been regular and there had been no excessive menstrual bleeding. The family history and systemic review were noncontributory.

Physical examination showed a very thin, asthenic woman in considerable distress because of the tremendous size of her abdomen. The chest was symmetrical and normal except for considerable tenderness under the lower ribs. Examination of the abdomen showed pronounced distention of the uterus with no recognizable fetal movements or heart sounds. The cervix showed partial dilatation and some bulging of the membranes.

Laboratory examination showed a negative serologic test for syphilis. The urine was normal. The patient was Rh negative. Her husband was Rh positive. Rh sensitivity studies revealed the presence of blocking antibodies in a titer of 64.

The patient's membranes were artificially ruptured, producing a large amount of amniotic fluid. She soon delivered a stillborn baby with pronounced icterus and marked enlargement of the liver and spleen. The placenta was large and thick. The amniotic fluid was orange-yellow in color. The baby's skin showed considerable maceration and the legs and arms of the baby were edematous. Rh typing of the baby's blood revealed it to be Rh positive. Examination of the blood of the patient's one living child showed him to be also Rh positive.

DISCUSSION

The instances of hydramnios of considerable degree which are reported in the literature are frequently associated with death of the fetus, usually on the basis of pressure, but often with resulting malformed infants. The figures compiled by Vogt show a fetal mortality over 50% in a group of 237 cases. Ninety-seven of these children were premature and twenty-five presented some malformation. Anencephalus, hydrocephalus and other anomalies are those reported most commonly. In this instance we have an additional complicating factor, mainly the erythroblastosis fetalis which in itself is sufficient to produce death of the fetus, so that the hydramnios need not be implicated as a possible cause. The point of interest to us is the association of these two conditions without necessarily implying a cause-effect relationship. We find no evidence in the literature of such a combination with any such relationship implied.

SUMMARY

A case of acute hydramnios associated with erythroblastosis is reported. The possibility but improbability of a cause-effect relationship is noted.

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MUSHROOM POISONING*

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Accidental poisoning in infants and small children is much more common than suspected. The toddling infant with strong motor drive is a great explorer. Once on his feet and with both hands free, he can poke and pry into all the hidden recesses of the house. Many of his wanderings are harmless. However, all too often he is the innocent victim of someone's carelessness. Oral consciousness is a dominant urge in this group and all manner of things find their way into their mouths.

With the new advances in medicine resulting in a decrease in the number of deaths due to disease, death due to accidents is assuming an increasing proportion. Poisons present symptoms that closely resemble and are often identical with those of disease. Consequently, the problem of diagnosis is important. When there is uncertainty as to the diagnosis in a child with an acute illness, one should always consider accidental poisoning in the differential diagnosis.

The following case which is reported is an example. A. P., 18-months-old white female, was brought to the Thayer Hospital late one afternoon. She was staying with her parents at camp and had been outside around the camp most of the day. The mother stated that she had been quite well until about one-half hour before admission. At this time she suddenly became ataxic, had fine convulsive movements of all extremities, and became unconscious. A piece of mushroom was reportedly removed from her mouth. There was no history of ingestion of any other substance which might have been toxic. There was no history of fall, past or present. She had been recently checked and found to be in good health. Family and past history were non-contributory.

On physical examination the rectal temperature was 98 degrees, the pulse rate 80, and the respiratory rate 28. The child was unconscious and did not respond to noxious stimuli. She was having fine convulsive movements of the face, hands, and arms, and less, though occasional, movements of her lower extremities. There was no definite localization of the convulsive movements.

The skin was pale and cool. There was moderate perspiration about the head and neck. There was no cyanosis. No hematoma or ecchymoses of the scalp could be found. Her pupils were widely dilated and did not react to light. There was no lacrimation. Funduscopic examination was within normal limits. Examination of ears, nose, and throat, was not remarkable. There was no nuchal rigidity or limitation of movement. Deep tendon reflexes were slightly

hypoactive. No pathological reflexes were noted. No Chvostek or Trousseau signs. The remainder of the examination was not remarkable.

Laboratory studies revealed a white blood count of 8,100 with 33% polys, 65% lymphocytes and 2% monocytes. A catheterized urine specimen contained a trace of albumin and no sugar. On microscopic examination, 2-6 white blood cells per high power field were seen. A lumbar puncture revealed no cells and normal dynamics.

Progress: Because the ingestion of mushroom was a distinct possibility, we attempted to aspirate material from her stomach. In this we were unsuccessful. Because of the fact that she was having active convulsive movements, it seemed unwise, in view of the very questionable diagnosis, to attempt to lavage her stomach for fear of aspiration. Consequently she was given sedation and we proceeded to rule out the more common causes of convulsions.

The similarity of the clinical picture with various conditions was puzzling. Organic brain damage was possible, though lacking in history. An infectious etiology appeared to be ruled out by the laboratory findings. There were no signs of encephalopathy or tetany. Of the various metabolic disorders, hypoglycemia appeared a distinct possibility. We were unable to get a satisfactory blood specimen. However, the effect of sweetened orange juice by mouth was not noteworthy. Without proceeding through the whole differential, suffice it to say we felt that we had ruled out the more common causes.

Mushroom poisoning, because of the history, had to be considered. At no time in the first three hours were there any manifestations of gastro-intestinal irritation which are so much a part of mushroom poisoning. Her pupils were widely dilated. Salivation was exceedingly difficult to evaluate.

She had quieted down a good bit with sedation. Her temperature had risen to 99.4 degrees, her pulse was 120, and her reflexes were hypoactive. She seemed to be moving into a post-convulsive state. At this point she roused and vomited. The vomitus contained portions of mushroom. These were subsequently identified with specimens from around the camp as *Amanita muscaria*. A saline purge was ordered and given. Her pupils were now contracted and she was not perspiring. There were no further gastro-intestinal manifestations. Her sensorium was clearing and there were no more convulsions. As the pharmacological effect of the mushroom poison appeared to be dissipating itself, atropine was withheld.

* From the Thayer Hospital.

In the next two or three hours she was a different child. Her recovery had been without sequelae.

Two varieties of mushroom are important, the fly amanita (*Amanita muscaria*) and the deadly amanita (*Amanita phalloides*). *Amanita muscaria* contains muscarine which acts to produce vomiting, watery diarrhea, abdominal pain, intense thirst, profuse perspiration, salivation, lacrimation, contracted pupils, convulsions, and coma. There is hypoglycemia (which was not demonstrated in this case). *Amanita phalloides* produces the more serious poisoning and the symptoms do not appear for six to fifteen hours. The toxic effect of the *Amanita muscaria* is due largely to the alkaloid muscarine formed by the oxidation of choline. The alkaloid phalline in the *Amanita phalloides* exerts its effect as a hemolytic agent.

Both species of poisonous mushrooms referred to have white gills and white spores, while all the edible gill-bearing species have gills of some other color. Toxic mushrooms grow clustered on wet or shady ground; the edible, singly in dry pastures. Those which have a bitter taste or that yield a pungent milk ought to be avoided. The prevailing belief that a silver piece will indicate poisonous mushrooms by becoming black when cooked with them is erroneous.

The stomach contents of the patient were submitted to Dr. Richard Ford of the Harvard University School of Medicine. The analysis by Joseph T. Walker was as follows: "This material consisted of about a dozen fragments of stem and cap of a white gilled, white spored mushroom. The gills were broad and thin. Upon microscopic examination they were found to be covered by a dense layer of colorless spores, ellipsoid in shape and only slightly distorted, presumably by gastric digestive processes. No inter-

nal structure could be observed. The gross and microscopic morphology was consistent with that of the genus *Amanita* variety *muscaria*. The ellipsoid character of the spores would tend to exclude *Amanita phalloides*, the spores of which are smaller and more nearly spherical."

Treatment consists of lavage of the stomach and emesis if indicated. Sedation may be helpful. Catharsis is of value in relieving the gastro-intestinal tract of its toxic contents. Atropine is the physiological antidote of muscarine and should be used in full doses according to age until its effect on the pupil has been observed.

DISCUSSION

The signs and symptoms of mushroom poisoning are definite. They depend upon the amount of mushroom ingested and the subsequent absorption of the toxic principle. In this case, poisoning was due to the *Amanita muscaria*. The fact that she did not manifest the complete pharmacologic effect of the muscarine was indeed fortunate. It did however make the diagnosis more difficult, simulating many conditions which only served to confuse. This case presentation illustrates the confusing similarity between mushroom poisoning and other disease states. It points up the need for awareness on the part of the clinician for accidental poisoning when the diagnosis is uncertain.

ACKNOWLEDGEMENT

The author is indebted to Dr. Richard T. Ford and Joseph T. Walker of the Harvard University School of Medicine for their help in the analysis of the stomach contents.

HOSPITAL ADMISSIONS — CAN ADMITTING PROCEDURES BE IMPROVED?

*"The only equipment lacking in the modern hospital is someone to meet you at the entrance with a handshake"**

FREDERICK T. HILL, M. D., *Medical Director***

I am firmly convinced that at least the majority of patients would answer the foregoing question in the affirmative. This, of course, would not be true of all hospitals but it must be acknowledged that too frequently the admission procedure has been tedious, fatiguing, and perhaps, unsympathetic, with emphasis upon financial responsibilities. Too often this results in poor Public Relations. I am also convinced that most physicians would welcome an improvement in the admitting procedure in their hospitals. Of course,

it is to be expected that both patients and physicians would have dissimilar conceptions of admitting than would the administrative officers of a hospital. Their viewpoint is quite different, naturally, and oftentimes the accumulation of statistical data seems somewhat like unnecessary "red tape." This misconception is due to lack of understanding but is fostered many times by the manner in which Admission is carried out.

Admitting is a far more complicated procedure than merely getting the patient into bed and treatment instituted. Certain statistical information regarding

* "Fischerisms"—Fabing, Howard, Thomas—1944.

** From Thayer Hospital, Waterville.

the patient and his family, and even his religion, must be assembled not only in case of complications or emergencies; but, for example, to provide needed material for future research studies. In addition, finances must be considered, not only to insure the hospital against serious losses but to see that accommodations are within the patient's means, that he not be unnecessarily crippled economically in an endeavor to heal him physically. This is as important with the ward case as with the private patient; especially so in these days when the possible sources of payment may vary from state, or municipalities, to some form of compensation insurance. Then, what is so often overlooked, the admitting office offers the ideal opportunity for explaining many of the seeming complexities of hospital routine to the patient; thereby assisting in his adjustment to what, to him, is a new and often feared, environment. Too frequently this opportunity is overlooked.

The Admitting Officer of a hospital holds one of the most important positions in that institution. A well-known industrialist once told me that he considered the receptionist the most important person on his office staff; for this position calls for intelligence, tact, friendliness, and ability far above any other of the office personnel. In the hospital this role is played by the admitting officer. This person should be courteous, friendly, tactful, and understanding. Also, she should possess some of the good qualities of salesmanship; not, to high pressure any patients into taking expensive surroundings but rather to point out that oftentimes it might be to the patient's advantage to take something more in keeping with his means. Likewise, when certain desired accommodations are unavailable, a good admitting officer may make what is available, quite satisfactory to the patient. In short, the Admitting Officer should be the first contact of the hospital with the patient and as such should be in a position to reflect the attitude of the hospital to the patient. Much of the impressions of the hospital which the patient carries away with him will depend upon the attitude and the personality of the person directing admissions. One might say that the Admitting Office reflects the soul and character of the institution.

It is well for us, who work in hospitals, to keep in mind that patients do not go to hospitals because they want to. They go because of some necessity, often with a marked dread of the experience and feeling that they don't know what they are going to encounter, or what the result is going to be. It may be a new and terrifying experience and about the only thing they are sure of is that when they leave they will be presented with a good-sized bill due to the unavoidable high costs of hospital care. When such a patient is greeted in a brusque, impersonal way, with a long and imposing list of what seems to be trivial

and irrelevant questions, and with a great deal of emphasis upon financial ability to meet the bill, is it any wonder that the patient commences his hospital experience under a decided handicap? Certainly the admitting office is a place for sympathy, for tact, and for understanding. Of course, the necessary statistical data must be secured but let it be done in a friendly, quiet surrounding, and in a considerate manner. The procedure many hospitals are now adopting of sending out to elective cases a questionnaire, in which the desired information may be filled in advance, is certainly a step in the right direction and will save a certain amount of annoyance on the patient's entrance to the hospital.

I have come to the conclusion that the Admitting Office should be under the charge of a very well qualified, carefully selected nurse. Often this office is left to a person with clerical qualifications but little background in medicine or hospital care. A nurse who has had experience in taking care of patients, who has all of the attributes of a good nurse, who has sympathy and understanding, and a knowledge sufficient to recognize the immediate condition of the patient, can carry on the duties of this office in a manner superior to one whose training has been largely in accounting or finance. I believe the admitting officer should be concerned with the patient throughout his stay, not merely while in the admitting office; that she, or someone from her office, should visit him periodically, be his friend and counsellor, and talk with him about his condition on discharge. I am convinced that the right sort of a person can depict the hospital to the patient to the decided advantage of all concerned. She should be able to carry out the admitting procedure as simply as is consistent with efficiency. She should be able to recognize any acutely ill, or feeble condition and expedite the procedure to suit the urgency of the case, obtaining the necessary data at a later time, or from relatives. She should be in a position to recognize and suggest certain measures to make for the patient's immediate well-being and comfort, such as having the bed warm for an aged or feeble patient in cold weather; or to recognize any acute condition which should be called immediately to the physician's attention.

The patient should be received in an Admitting office which is pleasant and comfortable and which affords desired privacy, and should be spared both fatigue and embarrassment. Generally accommodations should be available as soon as possible, making unnecessary any fatiguing wait on the part of the patient. All of this makes for good public relations for the hospital and this holds as true for the ward patient as the person going into a private room. Doctor's instructions should precede, or at least accompany the patient to the hospital and be in written form. The Admitting Officer should be qualified to

recognize the importance of such orders and to interpret them to the staff nurses.

Some years ago it is said that the late General Gorgas was admitted to a New York Hospital convalescing from typhoid fever. He had been brought to New York from the Canal Zone, accompanied by his Adjutant. Both had travelled far and were in a somewhat disheveled condition. In the Admitting Ward they received little or no attention. They did not appear to be very impressive. They sat in the ward unnoticed. Several internes and nurses were gossiping over in the corner, while orderlies were wandering through the place, smoking cigarettes. At

last the Adjutant became quite enraged and announced in a loud voice that the sick person with him was General Gorgas and he wanted action. Then, and only then, was there action, and everybody from Superintendent to Supervisors, internes and orderlies were flying around, and the General was speedily admitted. Now one never knows when a General Gorgas would be seeking admission to our Hospital. And, in the eyes of the hospital, every patient should be a General Gorgas. That would make for much improved Public Relations. Why not, at least, simulate the handshake at the entrance?

THE ROLE OF THE LABORATORY IN STAFF DEVELOPMENT*

IRVING I. GOODOF, M. D.**

Much has been said, and often, regarding the value of the laboratory to the physician, and through him to the patient. There is no argument against the virtue of an accurate diagnosis in the management of any patient, and this subject needs no expanding.

The additional, non-specific role which the laboratory and its director should play, has been mentioned only vaguely and briefly, and certainly merits more consideration than has been its share.

We must, to preface this discussion, make the stipulation that this consideration refers to the smaller type hospital, frequently located at some distance from a major medical center. The large urban institutions commonly have as chiefs of services men of professional rank on medical school faculties, and others of like caliber, whose reputation and example are such as to wield tremendous influence in promoting staff development. Under these circumstances the pathologist and laboratory form only a spoke in the entire wheel of influence.

The smaller institution, however, is more commonly staffed by practitioners who have been away from a medical center for many years, and whose time is occupied with treating their patients to the exclusion of formal furtherance of education. The time available for reading and study is more easily spent in relaxation, admittedly sorely needed.

This being the situation, the interests of progress in medicine must be served by some agency readily available to these men, to which they may turn for assistance and information along any path of medical knowledge. The manner and attitude of the labora-

tory and its director will determine, to a tremendous extent, the use to which it is put.

In what ways may the laboratory aid in the development and progress of the medical staff? This question must be divided into two parts. Staff development may be interpreted as a collective idea, considering the questions of enlargement of the staff along lines needed in the community, replacement of retired physicians with men trained in specialties required in the area, and readjustment of the staff with limitation of privileges in indicated instances.

To consider first the enlargement of the staff or replacement of retired physicians, it goes without saying that the availability of a well organized, reliable laboratory and a properly trained pathologist will attract the better trained men in any specialty. It would be extremely difficult to persuade an internist, intent on practicing good diagnostic medicine, to settle in a locality where the hospital offered no laboratory consultant and a poorly supervised technical staff. A surgeon would consider only briefly the advantages of practicing without the ready availability of frozen section diagnosis, prompt reliable biopsy reports, and adequate laboratory means for following patients postoperatively.

The matter of readjusting the staff is more difficult to evaluate. With the information available to the pathologist, the quality of surgery is readily determined, and, in the case of the medical man, unintelligent use of the laboratory (the so-called "peripheral medicine") is the first lead in suspecting superficial knowledge of the field.

The end result of the above considerations undoubtedly is a collectively improved staff. However, the development of the individual members of the

* Presented at the New England Hospital Assembly, March, 1951.

** Thayer Hospital, Waterville, Maine.

staff is at least as important, since these are the men who are established in the locality and will be with you for a long time. What can the laboratory do for them? Here the pathologist becomes the factor of prime importance. From the standpoint of formal activity, the use of the pathologist as a consultant is invaluable. The discussion of a patient by the pathologist and attending physician, following examination, will almost invariably result in the suggestion of a key laboratory procedure which will confirm a suspected diagnosis or point to an unsuspected one. In the course of such discussion, the attending physician is certain to absorb some ideas regarding the proper intelligent use of the laboratory together with information regarding the pathologic picture presented by the patient. The result is a clearer picture, with a more logical approach to the next patient.

The informal discussion of patients in the doctors' room, or, more effectively, in the coffee shop, is of even greater value, since a group will often gather. The pathologist then has the opportunity and privilege of delving into a disease process with comments, questions, and suggestions from the entire group. At such times, physicians have a tendency to recall patients of their own who presented a similar picture, and whom they now would handle differently from the standpoints of diagnosis and treatment. These men, then, are certainly developing, as individuals. Every step forward, by any staff member, raises the general average.

In general, since he is in contact with all phases of medicine, the pathologist must read the literature of many specialties. As a result, he should be able to recommend a source of information on most problems which may arise. An even more satisfactory situation, in which the pathologist usually plays the leading role, is the organization of a journal club, participated in by as many staff members as possible. By meeting weekly or biweekly the various journals in different fields of medicine may be reviewed, to the advantage of all participants. The pathologist contributes most when he acts as moderator, interspersing comments and descriptions of the condition under consideration when indicated.

Since it has been mentioned before that the importance of the laboratory in diagnosis cannot be overestimated, the pathologist can promote intelligent use of the laboratory by addressing the staff frequently with discussions of the procedures available, and their uses and advantages under varying circumstances. By this means the staff receives repeated educational

stimuli which must bear fruit in better patient care over a period of time. The conducting of clinico-pathological conferences with free discussion and constructive comment by the pathologist is extremely valuable in preventing repetition of previous errors.

One of the most important phases in staff development lies in the teaching of the approach to diagnosis and treatment through an understanding of the pathologic processes involved. For this purpose the availability of gross specimens, colored slides, and microscopic sections, with regular demonstrations for the staff is of inestimable value. A brief session for such demonstration at the time of each meeting of the staff will maintain an awareness of what is being treated and why treatment is effective or otherwise.

The advantages of post-mortem examinations in staff education need little comment. The opportunities for discussion of a wide range of subjects are unequalled in any other type of exercise. Each organ may bring up a question in the mind of an observer which can be clarified by immediate demonstration and description. The explanation of a disease process with the lesions in direct view is without doubt the most impressive means of teaching. An interested pathologist can do much to maintain the attention of the staff at such a session by means of questions, suggestions and comparisons with other cases.

One of the functions of a hospital, however small, is investigation. The authorities, concentrated in large centers with all necessary facilities, state that anyone who sees patients can carry on clinical investigation. In most instances, however, it would be difficult to evaluate the results of such efforts without reliable laboratory confirmation of the diagnosis, and similar evidence of change in the status of the patient.

The availability of a good laboratory with a competent, interested director, often stimulates the development of research projects participated in by many members of the staff. The presence of a "spare" technician, who may be assigned to carry on such projects, as well as developing and modifying the routine laboratory procedures, is of immense value.

To summarize, then, the laboratory plays its part in staff development by making available the most modern diagnostic procedures and acquainting the staff of their availability; by the advice of the director on intelligent use of these facilities; by the formal and informal educational efforts in the field of pathology; and by the general police activity of the laboratory director.

CLINICAL PATHOLOGICAL CONFERENCE*

STANLEY C. BECKERMAN, M. D., and FREDERIC B. CHAMPLIN, M. D.

The patient is a tall (6' 2"), lean (135 lbs.), sixty-year-old white, married male, an automobile mechanic by trade.

He was first seen one evening at which time he was having tonic muscular contractions in his left thigh occurring every few minutes and causing him to cry out in pain. This had been going on for four hours. He had experienced similar attacks every few months for the past 20 years. These cramps appeared suddenly while at rest, were not aggravated by work or walking, were spasmodic and lightning-like in nature, beginning as a sharp pain in the upper mid-abdomen and shooting through the abdomen into the left leg setting off the tonic contraction. The attacks usually persisted for several hours and spontaneously disappeared, occasionally requiring an injection of morphine to terminate the cramps. During the attacks, the left lower extremity was subjectively cold, but there are no areas of anesthesia or paresthesia. While examining the patient, the cramps spontaneously disappeared, but the patient was hospitalized for study.

He also gave a history of gastric distress and vomiting for five or six years, as well as a feeling of fullness and a dull aching in the epigastrium. These symptoms were not related to meals, nor did he have any particular intolerance to fatty foods, but he was distressed by eating apples, citrus fruits, spicy foods, cold water, and pastry. Any of these complaints might appear at any time of the day or night, the patient being relieved by vomiting or drinking warm water. He had been vomiting daily, and frequently awoke during the night and vomited, for two to three months prior to this episode. The vomiting was not projectile in character, the vomitus being described as a cupful of clear frothy fluid.

In 1910, the patient contracted lues and was given five injections. Six years ago, during a routine examination, the serology was reported as "doubtful" and he was given 18 injections of arsenic and mercury. Following this the serology was reported as negative.

The patient smoked one package of cigarettes a day but did not use alcoholic beverages. He felt that he had a marked intolerance to cold and became easily chilled, particularly out of doors. He had had an unusual desire for salty foods for the previous 2-3 years and "craved salty foods as much as the average person craved sweets."

A review of systems and family history were both essentially negative.

Physical examination revealed a tall, thin white man, sixty years of age, lying somewhat uneasily in bed, periodically crying out with pain in the left lower thigh. The skin was warm and dry, appeared tanned and hyperpigmented in the exposed portions. Examination was negative with the exception of the following findings. There was moderate (1-2 plus) tenderness in the epigastrium, pressure here producing nausea. The liver was percussible 6-8 cm. below the right costal margin but not palpable. The left thigh muscles, particularly the lower medial group, periodically underwent strong tonic contractions. There were normal dorsalis pedis, popliteal, and femoral pulsations in both lower extremities with no varicose veins. No appreciable degree of arteriosclerosis was evident. Hemorrhoidal skin tags were present and the prostate was moderately enlarged. Several internal hemorrhoids were present. Neurologic examination was entirely negative. Temperature was 97.6, pulse 80, respirations 20, and blood pressure originally 120/70, subsequently 100/75 on repeated examinations.

The patient had a perfectly uneventful stay in the hospital. He was placed on a regular diet and allowed out of bed. A spinal tap produced crystal-clear fluid under no increased pressure. Queckenstedt was negative bilaterally. None of his symptoms reappeared. The following laboratory findings were reported.

Urine—acid, sp. gr.—1022, no albumin, sugar, or acetone, no casts or abnormal cells.

R. B. C.—5,060,000 Hb.—15.9 gms.—102% Color Index 1.02.

W. B. C.—9,800 Baso—2, Eos.—2, Segs.—63, Lymphs—29, Mono.—4.

Serum total protein—6.5 gms.% Albumin—3.6 Globulin—2.9 gms.%.

Cephalin Flocculation—negative in 48 hours.

Hematocrit—49, MCV—98, MCH—31.6, MCHC—32.

Serum Chloride—603 mgm.% (as NaCl).

Sodium—153 meq./l. Potassium—6.4 meq./l.

Calcium—11.6 mgm.%. Inorganic phosphorus—3.1 mgm.%.

Serology—positive, 2 Kahn units.

Spinal fluid—negative on Hinton, Globulin and Colloidal Gold.

Eosinophile count—2950/cu. mm. 2700/cu. mm.—4 hours after administration of epinephrine.

* Thayer Hospital, Waterville, Maine.

GLUCOSE TOLERANCE TEST

	Blood Sugar	Urine Sugar
Fasting	77	Neg.
Ingestion of 100 gms. of glucose:		
1/2 hour later	140	2+
1 hour later	114	1+
2 hours later	72	Neg.
3 hours later	96	Neg.

A second glucose tolerance study showed even lower values throughout.

X-rays of the chest, gallbladder, colon and rectum, and upper gastro-intestinal tract were all negative.

The patient was starved for one 24-hour period to determine the effect on blood sugar levels. After 19 hours of fasting, the blood sugar was 83 mgm.% and at 24 hours, 94 mgm.%. The patient suffered no ill effects. He was placed on a high protein diet and in a day or so was discharged.

Shortly thereafter, penicillin was administered intramuscularly, 600,000 units daily for twelve days. One month later the serology was still positive, 2 Kahn units, and it was felt that since adequate therapy had been administered, the serology was at that point irreversible and the luetic infection to be considered as cured.

His course was rather uneventful for the next few months. He vomited less and had fewer and milder attacks of leg cramps, but then began to complain again of gastric distress, vomiting, and bloating after meals. Takazyme (Parke-Davis), a carbohydrate digestant, was given after each meal, and he again did well for a few months until an attack of leg cramps necessitated his being hospitalized once again. Physical findings were essentially unchanged. The cramps, which still involved only the left thigh, persisted for several nerve-wracking hours in spite of attempts to stop the attack with demerol, calcium gluconate intravenously, prisoline, morphine, and oxygen by mask. A low spinal anesthesia was finally used and within five minutes the contractions ceased and the patient slept.

Laboratory findings at that time were:

Urine—alkaline, sp. gr.—1.014, no albumin, sugar acetone, no casts or abnormal cells.

R. B. C.—2,700,000. Hb.—7 gms. (45%).

Fasting blood sugar—90 mgm.%.

Lee-White clotting time—10 minutes, 5 seconds.

Platelets—180,000.

Serum Calcium—11.5 mgm.%.

Questioning revealed that he had had, for the past few weeks, moderate amounts of bright red blood in his stools and one day bled from his rectum while at work. He was not sure whether or not he had had

any tarry stools. He was then given one unit of blood and placed on morphine every four hours. He rested fairly well through the night but at six a. m. he suddenly got out of bed and vomited some darkly colored fluid on the floor which was reported by the laboratory to contain blood. One hour later, he was lying quietly in bed in no apparent distress, although he was somewhat disoriented, probably from the morphine he had received during the night. Upon examination, however, his abdomen was found to be rigid. His blood pressure was 120/70, pulse 96, temperature 99.6, respirations 28. Abdominal flat plate was taken immediately and paralytic ileus was found. In an upright film, a small gas bubble was noted under the right diaphragm. An operation was performed.

CLINICAL DISCUSSION

Dr. F. B. Champlin

This sixty-year-old mechanic first entered the hospital for study of recurrent painful cramps in the left thigh, requiring morphine to provide relief. These lightning-like pains would begin in the epigastrium and radiate into the left leg. The leg would become subjectively cold. On a subsequent admission, in spite of a variety of drugs administered, the painful cramps were finally brought under control by low spinal anesthesia. It is of interest, I think, that this particular symptom was of twenty years' duration, waxing and waning, without evidence of atrophy of muscles or reflex changes developing. One might be tempted to consider tabes dorsalis in view of this man's presumed luetic background, but the absence of pupillary signs or other neurological and spinal fluid stigmata would seem to militate against such an impression. The possibility of a ruptured nucleus pulposus in the high lumbar area is worthy of consideration, especially in view of this man's occupation and his age at the onset of symptoms. It would seem more than likely that muscle atrophy or reflex changes should be present after twenty years if this were a lumbar disc. Osteoarthritic changes, secondary to an old back injury, could produce nerve root irritation and hence muscle spasm and pain. The hematocrit would appear to rule out pernicious anemia as being an etiological factor and besides, twenty years is a long time for such an untreated anemia to be responsible for symptoms without producing more definite neurological signs.

The history of gastric distress and vomiting intermittently over a five- to six-year period is intriguing. Apparently food made little difference so far as the pain was concerned. The fact that he subsequently developed pernicious nausea and vomiting, occurring night and day for two or three months, suggests the possibility of partial obstruction of the gastro-intestinal tract by either a chronic duodenal ulcer with a

Continued on page 64

EDITORIALS

Maine Medical Association Centennial Observance

1953

Dr. C. Harold Jameson of Camden, President of the Maine Medical Association, has appointed the following doctors as members of the Centennial Committee of the Maine Medical Association:

President C. Harold Jameson, M. D., Chairman ex-officio, Camden.

Merrill S. F. Greene, M. D., Lewiston.

Warren E. Kershner, M. D., Bath.

William V. Cox, M. D., Lewiston.

James A. MacDougall, M. D., Rumford.

Thomas A. Foster, M. D., Portland.

Carl E. Richards, M. D., Sanford.

Allan Woodcock, M. D., Bangor.

Robert W. Belknap, M. D., Damariscotta.

Richard C. Wadsworth, M. D., Bangor.

Frederick T. Hill, M. D., Waterville.

The Maine Medical Association was organized in

1853. Several doctors, representing different sections of the State, met in April, 1853, at the Tontine Hotel in Brunswick, and, after some discussion of the subject, resolved to organize, and set the date of June 1st, 1853, and the place, Winthrop Hall, Augusta, for the organization of a medical association. At that time and place 82 physicians met, with Dr. Isaac Lincoln presiding, and, after signing the Constitution, they were all declared members of the Association.

At its Annual Meeting in 1953 (Annual Meetings have usually been held in June) the Maine Medical Association proposes to hold a fitting observance of the 100th Anniversary of the Association.

The Committee met on Friday, February 15th, at the Eastland Hotel, Portland, for its organization meeting to determine the character and scope of the observance which it is to arrange.

Progress Notes On 1952 Annual Meeting

The Samoset, Rockland, Maine, June 22, 23, 24

It is with great pleasure that we announce the acceptance of Dr. Louis Bauer, President-elect of the American Medical Association as our headliner for the Monday evening dinner, June 23rd. By the time the annual meeting takes place, Dr. Bauer will be the President of the Association and we will have the double honor of being able to entertain the President of the American Medical Association and of being able to listen to his erudite exposition of one of the

medical topics of current importance. In the next set of progress notes, we will try to give you a fairly definite idea of the exact scientific program which will be presented. It is nearly formulated now, and promises to be of outstanding interest.

LORING W. PRATT, M. D.,
Chairman, Scientific Committee,
Waterville, Me.

PERTINENT DATA ON FEDERAL MEDICAL SERVICES, INCLUDING V. A.

As Chairman of the National Doctors Committee (an affiliate of the Hoover Commission) for the State of Maine, I have kept well informed on its activities and have been attempting to activate legislation in Congress which will improve Federal medical care, including that of our Veterans Administration's Hospitals.

The following is a quotation from the address of Dr. Robert Collier Page, chairman of the National Doctors Committee, given at the tenth annual meeting of the New England Postgraduate Assembly:—

"Miles City, Montana, has a population of 9,184 and, with a Public Health Service estimated need for hospitals at $3\frac{1}{2}$ beds per thousand people, is already well serviced with a hospital of 135 beds. There are 13 doctors in Miles City, of whom six would be unable to aid the Veterans Administration hospital. The result is that the new Veterans Administration hospital has a layman manager, no medical director, nor chief of medical services, and no patients. Moreover, the location of Miles City (350 miles from the nearest railroad division point) makes it extremely inconvenient for it to be reached by Veterans Administration patients. At \$50,000 a bed, this is an extraordinary waste."

"There are striking examples of lack of coordination in this area. The Veterans Administration was planning a thousand-bed hospital in Boston when the Murphy General at Waltham with 715 beds was being disbanded. The Administration was planning a thousand-bed hospital in Brockton while the government was closing down the Valley Forge General Hospital at Phoenixville, Pa., which accommodates 1650 patients."

"Two more striking examples—a big new Veterans Administration hospital was recently opened in West Virginia with great fanfare. At last report, it had a staff of two physicians and no patients. In Dublin, Georgia, there stands a thousand-bed hospital in which the Veterans Administration is authorized to staff and use 500 beds. At this time, only 300 beds can be used because of the staff problem and because transportation facilities to this installation were so poor an airfield had to be built to bring the patients in. The nearest Pullman sleeper facilities are 53 miles away at Macon, Georgia."

"The government is therefore doing an injury to the civilian population and to the medical profession by stockpiling doctors in unnecessary institutions."

"Another dis-service results from laxity in the enforcement of law by which many veterans obtain admission to government hospitals for free care simply by signing a 'pauper's oath' that they are unable to

pay. According to Senator Paul H. Douglas of Illinois, an outstanding exponent of economy in government, this practice costs the government several hundred millions annually."

"There, in brief, is a picture of the present Federal Medical System. All the evidence . . . the findings of the medical experts who have studied the federal medical system for the bipartisan Hoover Commission, the experience of hundreds of private physicians and many thousands of veterans who have been confined in federal hospitals . . . points strongly to two basic conclusions."

"1. Government medical services, through the years, have grown without over-all supervision into a confused, extravagant collection of competing agencies. They are wasting medical manpower and facilities and getting into each other's way. Another is a maldistribution of doctors to the detriment of large areas of the population.

"2. Every action of the government in the area of medicine affects the private practitioner in one way or another. Our federal government is by far the largest single employer of doctors and the biggest operator of hospitals in the land.

"These are the facts. Each doctor must voice his objections to the government for ignoring the needs of the civilian population by the wasteful use of medical manpower by building more hospitals than it can staff and **allowing lay officials to oversee doctors in the purely medical functions** of the Veterans Administration.

"The present situation calls for action—action by doctors. In the opinion of many, the bills now before Congress for creation of a Federal Department of Health (S. 1140 and H. R. 3688 and 3305) are good bills. They would cure many of the evils that presently exist. Others, however, feel the bills are not strong enough, that the medical profession is not adequately protected. And still others, of course, believe that nothing should be done."

"That something will be done, however, is clear. It is also extremely clear that unless **the doctors of the country make their voices heard** in Congress, some legislation engineered by layman groups may be passed that could have disastrous results for the medical profession. Certainly Congress cannot be blamed if they are not informed as to how the doctors feel about this important legislation. Certainly Congress cannot be blamed if medical men have not enough self-interest to state their position."

Maine physicians are vitally interested in what is done by our legislators in Washington. Our Sena-

tors and Congressmen get plenty of pressure from organizations which influence their decisions.

As individuals, we doctors have fallen down on the job of making our wishes known. The CIO, the veterans' organizations, and other groups leave no stone unturned to get legislation favorable to them. Our motives are more altruistic and we should do no less than they to get our own views across.

As Chairman of the National Doctors Committee for Maine, I urge every doctor in Maine to write to his Senators and to his Congressman registering his views concerning any abuses that he knows to exist in Federal Medical Services. He should register his views on the economy and efficiency with which the Veterans Administration is managed. If we doctors register our convictions, no legislation will be passed which gives lay persons the upper hand over doctors, with which we are now threatened, and from which

we are already suffering. We have personal political power if we only use it. Hired agents cannot exert as effective political pressure as we individual doctors can. We are too inactive.

The legal profession will never be socialized because vigorous firm voices are heard in Congress whenever their liberty is threatened. Lawyers are not above being politicians and we should not be. Good politics makes good government. Our Way of Life we owe to the politician. If through our neglect, our American Way of Life which includes a way of giving and taking medical care that has been the best in the world,—if this fades away, then, we have only ourselves to blame.

ADRIAN H. SCOLTEN, M. D.,

*Chairman, National Doctors Committee
for the State of Maine.*

HOSPITAL STAFF MEETINGS

Open to the Profession

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital	2nd Thursday
	Notre Dame Hospital	2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General	2nd Thursday
	St. Mary's General	2nd Monday
Portland	Maine Eye and Ear Infirmary	1st Tuesday
	Maine General	2nd Friday
	Mercy	3rd Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Monday
Waterville	Sisters	2nd Tuesday
	Thayer	Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.

COUNTY SOCIETIES

Androscoggin

President, Alcide F. DuMais, M. D., Lewiston
Secretary, Paul G. Lemaitre, M. D., Auburn

Aroostook

President, Bernard H. Gagnon, M. D., Houlton
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Theodore M. Stevens, M. D., Portland
Secretary, Ralf S. Martin, M. D., Portland

Franklin

President, Wallace H. Duffy, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Silas A. Coffin, M. D., Bar Harbor
Secretary, Joseph H. Hanson, M. D., Bar Harbor

Kennebec

President, Francis H. Sleeper, M. D., Augusta
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, Harry G. Tounge, M. D., Camden
Secretary, Robert L. Allen, M. D., Rockport

Lincoln-Sagadahoc

President, Arthur A. Nichols, M. D., Wiscasset
Secretary, M. W. Westermeyer, M. D., Bath

Oxford

President, Edward L. Reeves, M. D., Lewiston
Secretary, Dexter E. Elsemore, M. D., Dixfield

Penobscot

President, Wesley C. McNamara, M. D., Lincoln
Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Linus J. Stitham, M. D., Dover-Foxcroft
Secretary, George C. Howard, M. D., Guilford

Somerset

President, Harland G. Turner, M. D., Norridgewock
Secretary, H. Carl Amrein, M. D., Madison

Waldo

President, Abraham O. Stein, M. D., Belfast
Secretary, Raymond L. Torrey, M. D., Searsport

Washington

President, DaCosta F. Bennett, M. D., Lubec
Secretary, Karl V. Larson, M. D., East Machias

York

President, Kenneth J. Cunco, M. D., Kennebunk
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Hancock

The annual business meeting of the Hancock County Medical Society was held on December 13, 1951. The annual financial report was read and approved.

The following Officers were elected for 1952:

President, Silas A. Coffin, M. D., Bar Harbor.

Vice President, Herbert T. Wilbur, Jr., M. D., Southwest Harbor.

Secretary-Treasurer, Joseph H. Hanson, M. D., Bar Harbor.

Censor, Arthur M. Joost, Jr., M. D., Bucksport.

Delegates to the Maine Medical Association: James H. Crowe, M. D., Ellsworth; and Philip L. Gray, M. D., Blue Hill. Alternates: Marcus A. Torrey, M. D., Ellsworth; and Harry Kopfmann, M. D., Deer Isle.

Approval was given to the proposed defense blood program for the armed forces only in Hancock County with the proviso that adequate recognition be made of the difficulty of obtaining blood for local civilian use in small communities and that in so far as possible the program avoid those donors who ordinarily donate for local use.

An excellent discussion of the problem of alcoholism and the value of A.A. in combating this disease was given by Mr. James Utterback of Bangor.

JOSEPH H. HANSON, M. D.,
Secretary.

Kennebec

The annual meeting of the Kennebec County Medical Association was held at the Augusta State Hospital, Augusta, Maine, December 13, 1951. The meeting began with a clinical presentation, very interesting, of a case showing paranoid tendencies; when this case was finished there was not time for others.

Inspection of the Elkins Diagnostic and Treatment Building followed—fascinating, interesting.

Then it was time for dinner which was of the best in food and service, enjoyed by forty.

We moved to another room where, in the absence of President Harlow, who had been called on an emergency, Vice President Sleeper (and host), opened the business. The record of the last meeting was approved. William N. Runyon, M. D., of Augusta, was elected to membership.

The annual reports of the Secretary-Treasurer were read and accepted.

The nominating committee made their report, whereupon it was called to the attention of the meeting that it had been in the past, a custom to elect out-going Presidents as delegates—it was so voted, the committee being requested to retire and bring in a revised list, which follows:

Officers for 1952:

President, Francis H. Sleeper, M. D., Augusta.

Vice President, Kurt A. Sommerfeld, M. D., Gardiner.

Secretary-Treasurer, Arch H. Morrell, M. D., Augusta.

Council: Harold E. Small, M. D., Augusta (1952), Charles E. Towne, M. D., Waterville (1953), Hugh J. Mathews, Jr., M. D., Gardiner (1954),

Delegates to the Maine Medical Association: Henry A. Brann, M. D., Augusta; James N. Shippee, M. D., Winthrop; Samson Fisher, M. D., Waterville; Anthony E. Lepore,



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In Visceral Spasm—it inhibits motility of the gastrointestinal and urinary tracts.

Parenteral BANTHINE is supplied in serum-type ampuls containing 50 mg. of Banthine powder. Adult dosage is generally the same as with Banthine tablets.



RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

M. D., Gardiner; and Edwin W. Harlow, M. D., Waterville. Alternates: Allan J. Stinchfield, M. D., Hallowell; Clarence R. McLaughlin, M. D., Gardiner; Moses F. Lubell, M. D., Waterville; Richard H. Dennis, M. D., Waterville; and Robert H. Dunn, M. D., Togus.

Dr. Sleeper introduced the speaker of the evening, Dr. Robert Hyde of the Boston Psychopathic Hospital, whose subject was *Can Psychiatry Contribute Significantly to Medical Practice*. He discussed a number of cases which brought out pointedly the fact that often the patient's emotional background and surroundings have a profound effect on their physical health; we are too often given to diagnosing the organic; ignoring the emotional factors; we spend too little time solving their conflicts and stresses; psychiatry can give a broadened perspective on what the doctor can and should do for his patient; years of experience bring a richness of perception and understanding that cannot be equalled; education could attempt to telescope the experience; producing more skill than the active period of life; the application of the physicians' broad, human understanding, their responsiveness to the real problems of the patients, is the practice of psychiatry.

Dr. Hyde invited and received an abundance of informal discussion as he talked with a pleasing informality.

After the paper closed, and the nominating committee returned their revised slate, and the election by single ballot—we adjourned.

A. H. MORRELL, M. D.,
Secretary.

Lincoln - Sagadahoc

A regular meeting of the Lincoln-Sagadahoc Medical Society was held January 15, 1952, at The Ledges Inn, Wiscasset, Maine. There were seven members present and one guest, the newly appointed physician at the Bath Iron Works, Dr. Kinder.

It was moved and voted to have the secretary write a letter to the Red Cross chapters of the Lincoln and Sagadahoc counties to acquiesce with their plans to collect blood for military and defense requirements. In these letters it was stated that it was understood that the blood collected in 1952 would be used for the armed forces only and it was agreed to render what help we as physicians could.

Since insufficient members were present the annual election was postponed until the next monthly meeting. The problem of poor attendance was discussed and it was suggested it be considered again at the February meeting which will be held in Bath.

Dr. Mandes from the New England Center Hospital gave an interesting and helpful discussion of the diagnosis and treatment of cerebral vascular accidents.

M. W. WESTERMAYER, M. D.,
Secretary.

York

The annual meeting of the York County Medical Society was held at the Kennebunk Inn, Kennebunk, Maine, on January 9, 1952.

A social half hour was held before the dinner at 1.00 P. M.

The following Officers were elected for 1952:

President, Kenneth J. Cuneo, M. D., Kennebunk.

Vice President, Paul E. Taylor, M. D., Kittery.

Secretary-Treasurer, Charles W. Kinghorn, M. D., Kittery. Censors: Joseph R. LaRochelle, M. D., Biddeford (1954); H. Danforth Ross, M. D., Sanford (1953); and Owen B. Head, M. D., Sanford (1952).

Delegates to the Maine Medical Association: Carl E. Richards, M. D., Sanford; James H. Macdonald, M. D., Kennebunk; and Charles W. Kinghorn, M. D., Kittery. Alternates: Kenneth J. Cuneo, M. D., Kennebunk; Melvin Bacon, M. D., Sanford; and Edward W. Holland, M. D., Sanford.

Board of Resolutions: E. Paul Webber, M. D., York Harbor; Frank W. Barden, M. D., Biddeford; and George R. Bancroft, M. D., Kennebunkport.

The annual Secretary and Treasurer reports were read and approved.

It was voted not to recommend a grievance committee but to leave it to the Council as in the past.

Voted to have the March meeting in Alfred with Dr. Richards to make arrangements for the meeting and speaker.

George W. Papen, M. D., gave a very fine talk which was followed by a question and answer period.

The following members and guests were present: Drs. Melvin Bacon, Frank W. Barden, Leandre R. Charest, Stephen A. Cobb, Kenneth J. Cuneo, J. Robert Downing, Marcel P. Houle, Charles W. Kinghorn, Joseph R. LaRochelle, William F. Mahaney, Waldron L. Morse, James H. Macdonald, Marion K. Moulton, Leon Nemon, Oscar R. Perrault, Carl E. Richards, Maurice Ross, Gerald R. Smith, Robert D. Vachon, William T. Roussin. Guests: George W. Papen, M. D., and Mr. Lloyd E. Sharpe, Safety Director, Sanford-Goodall, Inc.

C. W. KINGHORN, M. D.,
Secretary.

POSTGRADUATE DIVISION TUFTS COLLEGE MEDICAL SCHOOL

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PRINCIPLES OF FLUID AND ELECTROLYTE THERAPY

March 3-4

Body fluid and electrolyte physiology; applications in medicine and surgery. Course given by Dr. William B. Schwartz. Tuition fee: \$20.

DIABETES

March 10-12

Clinical procedures most effective in diagnosis and treatment of diabetes mellitus and its complications. Metabolic and endocrine aspects reviewed. Dr. J. Rosenthal in charge. Tuition fee: \$30.

CARDIOLOGY

March 17-21

Differential diagnosis and therapy of heart disease. Dr. H. Magendantz in charge. Tuition fee: \$40.

DERMATOLOGY II

April 7-11

A refresher in diagnosis and treatment of common skin diseases including fungus infections, avitaminoses, occupational dermatoses, and syphilis. Chemotherapy and antibiotics evaluated. Dr. J. G. Downing in charge. Tuition fee: \$40.

TRAUMATIC SURGERY

April 21-26

Shock, injuries to brain, peripheral nerves, hand, chest, abdomen, genitourinary tract; special fracture problems; neurogenic bladder. A 2½-day review of modern concepts of treatment. Dr. A. A. Thibodeau in charge. Tuition fee: \$30. For enrollment forms and information on courses, address

Postgraduate Medical Courses,
30 Bennett Street, Boston 11, Mass.

NECROLOGY

Camp C. Thomas, M. D.

1882 - 1951

Doctor Camp C. Thomas, 69, head of the X-ray department at St. Mary's Hospital, Lewiston, Maine, died on November 15, 1951, at the hospital after several months' illness.

He was born in Waterford, Pennsylvania, May 9, 1882. He taught high school in Indiana, becoming principal and superintendent of schools. Through his writings on the modern art of teaching he was awarded a medical scholarship at Kalamazoo College in Michigan where he graduated with an A.B. degree.

He earned his B.S. at the University of Chicago and his M.D. at the University of Michigan.

Following graduation, he was commissioned by the Ford Foundation to supervise and direct the installation of roentgenology equipment at the Ford Hospital in Willow Run, Michigan. Later, he pioneered in Roentgenology at Roches-

ter, N. Y. Hospital, heading the department. For 20 years he operated his own clinic in Rochester.

In 1936, he moved to Lewiston, where he headed the X-ray department at St. Mary's Hospital until his retirement at Greene, two years before his death.

Dr. Thomas was a past president of the staff at St. Mary's Hospital and of the Androscoggin County Medical Society. He was a member of the Maine Medical Association, American Medical Association, honorary member of the National Roentgenologists Society, member of the New England X-ray Society, diplomate of the American College of Radiology and member of the American Radiology Society.

He leaves his widow, the former Bertha Pearl Horst; a son, Camp Lee; a brother, Dr. Glancy Thomas, Detroit; a sister, Mrs. Percy Vernon, Poland; and a granddaughter.

NEWS AND NOTES

Department of Health and Welfare Division of Maternal and Child Health (Including Services for Crippled Children) Clinic Schedule—1952

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: Jan. 14, Feb. 11, Mar. 10, Apr. 14, May 5, June 9, July 14, Aug. 11, Sept. 8, Oct. 13, Nov. 3, Dec. 8.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: Jan. 18, Feb. 15, Mar. 21, Apr. 18, May 16, June 20, July 18, Aug. 15, Sept. 19, Oct. 17, Nov. 14, Dec. 12.

Rumford — Community Hospital, 1.30-3.00 p. m.: Mar. 19, June 18, Sept. 17, Dec. 17.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Feb. 28, Apr. 24, June 26, Aug. 28, Oct. 23, Dec. 18.

Rockland — Knox County Hospital, 1:30-3.00 p. m.: Feb. 21, May 8, Aug. 21, Nov. 13.

Machias — Normal School, 1.30-3.00 p. m.: Feb. 13, Apr. 2, June 11, Aug. 13, Oct. 8, Dec. 10.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.—1.00-3.00 p. m.: Jan. 8, Mar. 12, May 13, July 9, Sept. 9, Nov. 5.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: Mar. 11, July 8, Nov. 4.

Fort Kent — Normal School, 10.00-1.00 p. m.: Jan. 9, May 14, Sept. 10.

Bangor — Eastern Maine General Hospital, 1.30-3.00 p. m.: Jan. 24, Mar. 27, May 22, July 24, Sept. 25, Nov. 20.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: Jan. 25, Feb. 29, Mar. 28, Apr. 25, May 23, June 27, July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

HARD-OF-HEARING CLINICS

Waterville — Thayer Hospital, 1.30-3.30 p. m.: Feb. 20, June 4, Sept. 3, Dec. 3.

PEDIATRIC CLINICS

Bangor — Eastern Maine General Hospital, 1.30 p. m.: Jan. 25, Feb. 29, Mar. 28, Apr. 25, May 23, June 27, July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

Waterville — Thayer Hospital, 1.30 p. m.: Jan. 8, Feb. 5, Mar. 4, Apr. 8, May 6, June 3, July 1, Aug. 5, Sept. 2, Oct. 7, Nov. 4, Dec. 2.

Presque Isle — Northern Maine Sanatorium, 1.30 p. m.: Jan. 23, Mar. 26, May 21, July 23, Sept. 24, Nov. 19.

By appointment only.

American Board of Obstetrics and Gynecology

"The American Board of Obstetrics and Gynecology announces the election of Dr. John L. Parks, of Washington, D. C., as a member and Director of the Board. Dr. Parks succeeds Dr. Joseph L. Baer, who has been Vice President of the Board for over twenty years and who has resigned."

State of Maine

Board of Registration of Medicine

Adam P. Leighton, M. D., 192 State Street, Portland, Maine,
Secretary.

Physicians licensed to practice in Maine in November, 1951.

Through Examination

- Dr. George Warburton Bate, McAdam, New Brunswick,
Canada.
Dr. Joseph Augustus Marshall, Maine General Hospital,
Portland, Me.
Dr. Harry A. Naumer, 37-8th Ave., Brooklyn, N. Y.
Dr. Niles L. Perkins, Jr., Maine General Hospital, Portland,
Me.

Through Reciprocity

- Dr. Alta Ashley, State House, Augusta, Me.
Dr. James H. Kelleher, 301 Essex St., Lawrence, Mass.
Dr. Robert F. Martin, 89 West St., Portland, Me.
Dr. Carroll H. Smith, Jr., Monmouth, Me.
Dr. Margaret Stebbins Smith, 100 Normal Ave., Presque
Isle, Me.
Dr. William Stahl, Sr., 343 Main St., Danbury, Conn.
Dr. George M. Walker, 393 Cedar St., Dedham, Mass.
Dr. Justin Charles Washburn, 133 East 58th St., New York,
N. Y.

American College of Chest Physicians

The Eighteenth Annual Meeting of the American College of Chest Physicians will be held at the Congress Hotel, Chicago, Illinois, June 5 through 8, 1952. A scientific program covering all recent developments in the treatment of heart and lung disease is being arranged.

The Board of Examiners of the American College of Chest Physicians announces that the next oral and written examinations for Fellowship will be held in Chicago on June 5, 1952. Candidates for Fellowship in the College who wish to take the examinations should contact the Executive Secretary, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

Dr. Edward A. Greco of Portland is Regent for the district and Dr. Francis J. Welch of Portland serves as Governor of the College for Maine.

Maine Red Cross Blood Program

Maine Red Cross Blood Program, with central offices in Bangor, offers position of Mobile Unit Physician, beginning March 1st. Salary \$455.00 per month. License to practice in Maine required.

Apply to: N. W. Faxon, M. D., Medical Director,
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Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Out-Patient Department, Thayer Hospital. 2nd Thursday, 4th Wednesday.

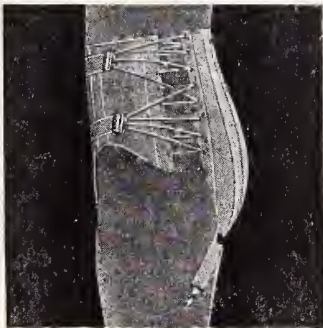
Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Brunswick, Caribou, Farmington, Fort Kent, Houlton, Lincoln, Machias, Old Town, Presque Isle, Rockland, Rumford and South Paris. All clinics are staffed by a psychiatrist and psychologist.

Referrals may be made by private physicians, parents, families, social agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta, where all appointments are made.



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Clinico Pathological Conference—Continued from page 54

clover leaf deformity and stenosis of the duodenum or a pre-pyloric ulcer with stenosis. The history states that the vomitus was a clear, frothy fluid and without apparent partially digested food. Obviously there could not be too much in the way of obstruction in the face of such evidence. A hiatus hernia cannot be ruled out, and aside from symptoms that frequently simulate a peptic ulcer, we know that severe gastro-intestinal hemorrhage may well have its origin in such a lesion.

We are dealing with a bleeding gastro-intestinal lesion as evidenced by hematemesis (bright red blood in the vomitus), melena and subsequently a hypochromic microcytic anemia. Evidently, the lesion responsible for the bleeding perforated a hollow viscus, as evidenced by air beneath the right diaphragm and the concomitant paralytic ileus.

How can we account for the obviously enlarged liver and what part does this hepatomegaly play in the over-all picture? The patient denied alcoholism and there is no history of jaundice or an acute febrile illness that might suggest infectious hepatitis. This man was treated for lues with intravenous arsenicals: Could he have developed a delayed toxic reaction to arsenicals? The slightly elevated globulin and the low sugar tolerance curve, in spite of a negative cephalin flocculation, are compatible with liver disease. A prothrombin time and a bromsulphalein test would be helpful in determining whether or not impairment of the liver was responsible for the gastro-intestinal bleeding, such as from esophageal varices.

It might be stretching a point to consider the skin pigmentation, the hepatomegaly, the peptic ulcer, and possibly neuritis in the left thigh as being attributable to arsenic poisoning. The history of craving for salt, the lassitude, and weakness, and the skin pigmentation also may represent adrenal insufficiency. In this connection it might be pertinent to mention Riehl's melanosis which has been attributed to adrenal insufficiency resulting from prolonged ingestion of toxic amounts of fluorine. The hyperpigmentation, the hypopiesia and hypoglycemia are signs of chronic adrenal insufficiency. Hypochlorhydria is another

finding in Riehl's melanosis. A gastric analysis in this case might have proved helpful. There is a similarity in the actions of fluorine and arsenic and it is not conceivable that the latter heavy metal is implicated here. Adrenal insufficiency is further borne out by the elevated total circulating eosinophils with less than a 50% drop in the count following the epinephrin test. The hemoconcentration and elevated serum potassium is part of the picture of adrenal insufficiency. On the other hand, the high serum sodium, is not consistent with such an impression and together with the elevated potassium and cell volume may well reflect dehydration secondary to the pernicious vomiting.

It is my impression that this man has had a pre-pyloric ulcer which has bled extensively and finally perforated. I am unable to determine the etiology of the hepatomegaly on the basis of the history and laboratory tests other than to suspect possible arsenic poisoning. An adrenal insufficiency is suggested by the history and electrolyte studies.

POST-OPERATIVE FINDINGS

The pre-operative diagnosis was, of course, a perforated peptic ulcer. This was found at surgery on the lesser curvature of the stomach just proximal to the pyloric vein. Bile was pouring from the perforation and a considerable amount of it found in the abdomen.

The perforation was repaired and the patient made an uneventful recovery. He was discharged on a modified Sippy diet with between-meal and bedtime feedings, aluminum hydroxide gels, tincture of belladonna, and phenobarbital incorporated into the régime. Since discharge he has done very well. He gained 45 pounds in weight during the next six months, now weighing 180 pounds, had one or two very short and mild attacks of leg cramps which were, however, no longer accompanied by abdominal discomfort, and which quickly and spontaneously disappeared. He has been completely free from all gastro-intestinal complaints and X-ray studies reveal his ulcer to be completely healed.

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LEUKEMIA

With special emphasis on "leukemia in infants"

R. A. BELIVEAU, M. D.*

Leukemia is a condition associated with qualitative and quantitative changes of white cells in the blood with proliferation in the tissues of the body. It is widespread all over the world and is invariably fatal.

Leukemia was first reported as an entity by Virchow about 1845 and to him is given credit for the term "white blood." Later he observed a type where lymphatic enlargement predominated and another where an enlarged spleen was the most prominent clinical finding.

Ebstein, in 1889, was first to report acute leukemia and give a comprehensive description of the major symptoms of this phase of the disease. At that time acute leukemia was considered to be only lymphocytic and it was not until 1900 when Naegeli described the myeloblast that it was possible to recognize that numerous cases, both acute and chronic, were myelogenous in type. All the cases described to that date were associated with a varying degree of leukocytosis.

However in the last 25 to 30 years many forms have been recognized without leukocytosis (aleukemic leukemia), literature has increased by volumes, numerous forms recorded and treatment instituted.

Acute and chronic leukemia can be differentiated by the morphological appearance of the cells, the acute form presenting much more immature cells than are found in the chronic type.

As for terminology, the best method is to speak of leukemia according to the predominating type of cells. Thus we may have chronic lymphocytic where the majority of the cells appear mature, acute lymphoblastic consisting of a high percentage of immature forms, chronic myelocytic and acute myeloblastic. Some writers use the terms "myeloid" and "lymphoid" while still others prefer to describe the condition as a neoplastic disease and use the terms leukosis, myelosis, lymphoblastoma, myeloblastoma.

We have mentioned leukemia originating in the bone marrow (myelocytic) and in the lymphocytic system. There is a third type which comes from the reticulo-endothelial system and classified as monocytic in nature (the Schilling histogenous type).

The cause of leukemia is unknown but it is interesting to note that Hebrews are particularly susceptible to the chronic lymphocytic type and that physicians suffer with the disease in a ratio of almost 2 to 1 as compared to the general population. And speaking of physicians has X-ray anything to do with the incidence of leukemia in radiologists which is eight to ten times as great as in non-radiologists? It is now known that long continued exposure to some of the industrial chemicals such as drugs which contain the benzene ring, insecticides which contain arsenic, and ointments containing tar may all have some action in changing the activity of blood-forming organs. The atomic energy which is continuously being studied

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for its radioactive possibilities and continuously expanding will be and is being scrutinized for its possibility as a cause of leukemia.

Now for clinical manifestations. Although the cellular morphology varies much in the different forms of leukemia the symptoms are so nearly similar in each type that for the sake of clarity we will discuss generally the difference between acute and chronic.

In the *chronic* form the onset is insidious and many cases have been discovered during the course of blood counts done routinely in the hospital or elsewhere. The condition may have existed for months before any symptoms become apparent. One of the first may be loss of weight and energy. Later the patient may feel a pulling sensation in the region of the spleen or may be able to palpate a gland or a bunch of glands in the body. As the condition progresses symptoms become aggravated. If the condition is of the myelocytic variety the predominant finding will be an enlarged spleen which may reach a tremendous size. Palpable lymph glands are small or may be entirely absent. In the lymphocytic type, on the other hand, numerous enlarged lymph nodes may be palpable while the spleen is only moderately enlarged. The glands are usually discreet, moderately firm and not attached to the skin. In each type of case, the liver is usually palpable and often is decidedly enlarged.

In the early stages of chronic leukemia there may be no anemia. Anemia in the myelocytic type is not severe while in the lymphocytic case may be quite pronounced at the time the diagnosis is made. In general the anemia is normocytic although variation in size of the red blood cells is frequently seen and in myelocytic leukemia a number of immature red cells may be present on the smear.

The platelets remain normal in number until there is a severe invasion by the white cells which finally crowd out the regular cells of the bone-marrow resulting in a moderate to marked decrease in number of both platelets and red cells.

The white count in chronic leukemia usually shows a well-marked leukocytosis varying between 80,000 and 800,000 sometimes reaching 1.0 million. The lymphocytic type usually presents a somewhat lower count than the myelocytic variety. Occasionally, however, one finds cases where the anemia and clinical signs indicate an advanced disease condition and the count is normal in number and may even be leukopenic.

In the acute leukemia, there is a rapid down-hill course with early invasion of the bone marrow by numerous immature cells and a resulting marked anemia and thrombocytopenia. Pallor and weakness may be the first symptoms or there may be bleeding from the mucous membranes, more frequently of the gingivae which becomes swollen and dark-red in

color. Numerous petechiae and ecchymoses appear in the skin.

Lymph node enlargement in acute leukemia is much less conspicuous than in the chronic. Splenomegaly may be absent although in some cases of lymphoblastic leukemia the enlargement of this organ may be almost as marked as in the chronic form.

The blood count will show an early anemia which may be very severe. The white cell count at first may be quite misleading. The leukocytes may be normal in number or even strikingly reduced. Later there is a disturbing fluctuation in the total number of cells but there will seldom be a count over 80,000 to 90,000. The study of the stained smear, even in cases of the so-called "aleukemic leukemia" will reveal a number of immature cells which help in the differential diagnosis as the majority of these immature cells will be of the "blast" type, very much younger than those found in the chronic cases. Unfortunately there are times when it is very difficult even for an experienced hematologist to differentiate the exact type of cells in acute leukemia but they all agree that the end result is always the same—death in a short time.

Leukemia has been observed in infants *at birth* in over 20 cases and in these cases the ratio of myeloblastic to lymphoblastic is 5 to 1. In general, statistics show that leukemia occurs much more frequently in the first 5 years of life than any other 5-year period and a very large proportion are of the acute variety which also predominates until the age of 20. From 20 to 50 chronic myelocytic is found most frequently while after 50 chronic lymphocytic is usually found.

I wish to present at this time the case of an infant which I had the opportunity to study lately and which presents a debatable so-called "congenital leukemia." Unfortunately early blood study was not possible until admission to the hospital but I consider the history of some importance in deciding in favor of that diagnosis.

Baby-girl, A. E., 8 weeks' old was admitted to the hospital on February 15, 1951, at 11 A. M. with a diagnosis of pneumonia and anemia.

She was one of several children, all in good health and was born in the hospital. At one week of age while still at the hospital she developed what the record notes as "Thrush." She was extremely irritable even after moving to her home.

Physical examination on admission showed a very pale but well-developed, well-nourished child with rapid wheezy respirations and a temperature of 104°. There was thick, tenacious mucus in the nose and the mucous membranes of the mouth showed several irregular areas of dark-red discoloration with no evidence of ulceration. Broncho-vesicular breath sounds were present over both lung bases and resonance was

decreased. The liver could be palpated one inch below the costal margin in the mid-clavicular line. The spleen was questionably palpable. The abdomen was rounded and distended. Examination of skin showed general pallor but both arms and the left thigh presented several areas of ecchymotic discoloration. No glands could be felt.

Red cells 3,320,000, Hb. 62%, white cells 180,000, a large number of which were immature. There were 2% normoblasts. Platelet count was not done.

Later in the day, respirations suddenly became irregular, deep cyanosis set in and death occurred 12 hours after admission.

Organs and slices of organs were received for microscopic examination as follows:

Liver: The sinusoids are distended with numerous white blood cells most of which are of the myeloid series in blast forms. The periportal connective tissue is swollen and infiltrated with very many similar cells. The liver cord cells are, for the most part, well preserved although a number have lost their nucleus. Many of the blood vessels are packed with white cells.

Spleen: Weight 24 grams, texture firm, and capsule showing numerous small areas of dark-red discoloration on a steel-blue background. Microscopic examination shows the general structure poorly preserved and the trabeculae obscured. The white and red pulp can hardly be distinguished because of diffuse invasion with white blood cells.

Lungs: Sections show alternating areas of atelectasis and of emphysema. The interalveolar septa are thickened and contain many cells as described. The bronchi are clear and their lining epithelium well preserved.

Bone: Marrow shows a relative decrease in number of red blood cells and an average number of normoblasts, megaloblasts and megakaryocytes. Lymphocytes are scattered throughout. A very large number of myeloblasts can be seen.

Kidneys: One kidney weights 100 grams, the other 90 grams. They are pale and firm. Lobulation is still present. On section, the cortex and medulla are poorly differentiated and cut-surfaces are very pale.

On microscopic examination, the cortical substance is markedly thickened and its stroma is packed with white blood cells. Many of the tubules are destroyed and the glomeruli appear swollen.

Pancreas: Weight 25 grams. Firm, irregular and very pale. On section, lobulation indistinct. Microscopic sections show a complete disruption of the normal architecture and acinous tissue almost completely absent. A diffuse infiltration with very many blast cells is present. Islands of Langerhan are relatively well preserved.

Discussion: It is possible that the "thrush" as entered in the hospital record at one week of age may have been a manifestation of leukemia. A dictionary describes thrush as "an infection of mouth or throat, especially in infants and children, characterized by formation of white patches, ulcer formation and frequently fever and gastrointestinal disturbances."

The mother noticed some "black and blue" areas on the skin of the arms some time before admission but she is not sure of the date of onset. It is possible that this may also have been a manifestation of leukemia very soon after birth.

The organs at the time of death were already infiltrated with a very large number of "tumor" cells and the kidneys and especially the pancreas were disproportionately increased in size.

Summary: A brief history of leukemia is given together with a discussion of the different types. A case is presented of an infant of 8 weeks who died of acute leukemia which in my opinion may well be added to the 20 or more cases of "congenital leukemia" already in the literature.

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DEATH FOLLOWING SPINAL ANESTHESIA

DOMINIQUE MARTEL, M. D.*

A year ago last October a paper by Dr. Foster Kennedy concerning serious and sometimes fatal complications following spinal anesthesia created quite a stir with repercussions in the lay press. Dr. Kennedy stressed the fact that complications of spinal anesthesia are not always well known or given sufficient importance by the average surgeon or physician. Too often it has been our own experience to observe this form of anesthesia taken very lightly to the point of being performed by the operating surgeon himself without any further special attention to the anesthetic welfare of the patient during the operation. Sometimes it is administered almost routinely with the assumption that it is quite innocuous.

Recent reports in medical literature favor a different opinion. Dr. R. P. Bargner et al. have just reported a series of 6 cases of such serious complications with four deaths. These deaths present a clinical picture of radiculitis, adhesive arachnoiditis, ascending myelitis, and meningo-encephalitis. The autopsies performed confirm the clinical diagnosis but the etiology does not seem well elucidated.

It has been our misfortune to have such a death following spinal anesthesia in our service last November. The patient was a 49-year-old female admitted on November 4, 1951, with a chief complaint of profuse vaginal bleeding. Nothing in her past history was of any interest except that in 1949 she underwent surgery for bursitis of the knee. Spinal anesthesia with pontocaine and novocaine was performed for the intervention, the patient had an uneventful recovery and was discharged 7 days after the operation. Physical examination revealed a normally developed, pale, tired looking female of apparently 55 years of age. No other positive findings except slight abdominal distention. Neuromuscular apparatus was examined and found within normal physiological limits.

Laboratory examinations showed a normal urine, negative Kahn and Hinton tests, slightly elevated sedimentation rate. The red blood count was 2,600,000, hemoglobin 7 gms., white blood count 3,800, color index 0.8.

After gynecological examination a diagnosis of fibroid uterus was made and the patient prepared for surgery. She received 500 c.c. of whole blood on the 6th and again on the 7th. On the 8th the red blood count was 3,400,000 and the hemoglobin 10 gms. After consultation between the surgeon and the anesthesiologist it was decided to perform surgery immediately before another hemorrhage should supervene and

administer blood in the operating room before starting surgery.

On the 9th the patient received Morph. gr. $\frac{1}{4}$ and scopolamine gr. 1/100 at 6.30 A. M. On admission to the operating room at 7.45 she was satisfactorily sedated. At 7.50 Ephedrine 75 mgm. was given intramuscularly. At 7.55 spinal anesthesia was administered using Pontocaine 16 mgm., glucose 10%, 2.4 c.c. and injected in L3. Spinal tap was performed without any difficulty or incidents. Patient was immediately turned on her back and put in 10 degrees Trendelenberg. The level of anesthesia quickly rose to the 6th thoracic segment and the patient was leveled off. An infusion of 5% glucose in distilled water was started and surgery began at 8.15. Sodium Pentothal 2.5% was administered intermittently in narcotic doses only, from the time the peritoneum was opened to its closure. A panhysterectomy and bilateral salpingo-oophorectomy were performed uneventfully and at 9.28 the skin was closed. The blood pressure rose to 170/80 and gradually returned to preanesthetic levels in 30 minutes. The pulse rose to 110 and leveled off also. Before being wheeled out of the operating room the patient complained of abdominal pain and moved her legs. Usual post-spinal precautions were taken and fluid therapy instituted.

The evening of the following day, November 10, the patient complained of a severe headache and backache which were not relieved by usual analgesics. On November 11 still same complaints of headache and also a numbness of the extremities and inability to move. At that time examination revealed a very depressed and worried patient. Both lower extremities were paralyzed and had lost perception of pain and other sensations. Achilles tendon reflex was absent bilaterally. Knee reflex was slightly active bilaterally. Bowels had moved once since operation. There was a Foley catheter in the bladder. The upper extremities had greatly decreased muscular strength: the patient had difficulty in feeding herself. At that time abdominal skin sensations and reflexes were physiological and respiration normal.

On November 12 there was no improvement of preceding symptoms and the patient complained bitterly of head and backache. The knee reflex was absent bilaterally and fecal incontinence was present. A consultation with the medical department confirmed the neurological pathology and asserted that we were dealing with an ascending cord paralysis. The fact that the thoracic segment appeared still intact seemed unexplainable.

On November 13, in the forenoon, the patient began to have respiratory difficulties. She complained

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of shortness of breath and it was evident that she could not take a full respiratory excursion. Paralysis progressed all day and at 9 P. M. the intercostal muscles were completely paralysed. Only diaphragmatic breathing was present and patient was unconscious. She expired at 11.15 P. M.

The autopsy findings:

Gross:

Brain: The dura is thickened and the spinal fluid beneath is colorless not cloudy. The brain substance is moderately firm and shows no evidence of edema or hemorrhage. The region of the pons and medulla shows a moderate amount of congestion and on multiple sections fail to show any pathological processes.

Cord: The cord on exposure shows a few small areas suggesting swelling. Multiple sections across the cord present some congestion, but there is no gross evidence of tissue destruction.

Microscopic:

Cord: The anterior horns of the cord in both the lumbar and thoracic regions show pathology in the form of minute petechial hemorrhages, extensive edema. A number of neurons have lost their regular outline while some have no nucleus and are surrounded by phagocytic cells.

Cause of death: Myocardial failure with edema of the lungs due to degeneration of spinal cord due to endometrial polyp and operation therefore under spinal anesthesia.

COMMENTS

It is fortunate that in this case we had the added evidence of an autopsy. Clinically it was evident that we were dealing with an ascending cord paralysis but the etiology though highly suspected was not certain. A spinal tap and fluid examination should have been done. The autopsy eliminated all infectious etiology. Since the patient gave no neurological complaints and presented no abnormal neurological findings prior to surgery, it seems logical to assume that spinal anesthesia had something to do with the death. Fortunately our drug ampules were autoclaved and not sterilized in an antiseptic solution. In the light of other cases of this nature in the literature it would seem that in some patients at a given time pontocaine or nupercaine or other local anesthetic drugs have a permanent lytic effect on the nervous tissue. But the nature of all the factors involved is far from clear.

Why did this patient react in such a way when 2 years previously she had uneventfully received spinal anesthesia with pontocaine and novocaine? Why did the clinical picture show first lumbo-sacral and cervical and lastly thoracic cord involvement? Why were the microscopical lesions of the cord limited to the lumbo-sacral segments when clinically there was definite

evidence of upper extremity involvement? The answers we have not been able to find.

After this death in our service and the published cases of Kennedy and Bergner and others we have changed our attitude toward spinal anesthesia. The nervous system consists of a highly specialized and differentiated tissue. We know that it does not regenerate itself and a nervous function once lost cannot be taken over by another part of the nervous system. Lesions of the nervous system when not deadly are always crippling and dramatically disabling. It seems more and more evident that we should presently regard spinal anesthesia with a great deal of respect, not so much for the number as for the disabling nature of some of its complications. Until elucidation of the pathogenesis of the pathology here involved and elimination of its etiological factors, we are inclined to limit its use to cases where general anesthesia is definitely contraindicated or cannot do so good a job. To quote Kennedy: "Paralysis below the waist is too large a price for a patient to pay in order that the surgeon have a fine relaxed field of operation."

I have in mind while on this train of thought the highly defended preference of one of my teachers, today a very competent anesthetist, for general anesthesia. Since the advent of curare and curare-like drugs I have personally used more general than spinal anesthesia. It has been my experience that as one acquires skill in the management of general anesthesia with curare it becomes evident that there are not many advantages of spinal anesthesia over general. The so-called silent abdomen is pretty well obtained with general anesthesia and curare. We feel that an unconscious patient is more comfortable physically and mentally under general anesthesia. But this subject unpartially analyzed could give rise to varied opinions.

CONCLUSION

A case of death due to ascending cord paralysis following spinal anesthesia is presented. Attention is focused on the cryptic nature of the pathogenesis of such a serious complication. In the light of the disabling nature of some of the complications of spinal anesthesia and the great technical progress of general anesthesia the question is raised as to the justifiability of so wide and sometimes indiscriminate use of spinal anesthesia. It is hoped that this case added to the others in the literature will help to hasten the work of experimental medicine towards making a very useful form of anesthesia a safer one.

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REPAIR OF EXTENSIVE VENTRAL HERNIAS WITH TANTALUM GAUZE MESH

A. F. DuMAIS, M. D.*

A majority of the ventral (incisional) hernias encountered in practice today can be repaired by well established operative methods. There remains, however, a substantial number of these hernias that are not amenable to recognized surgical procedures and their successful repair continues to tax the ingenuity of the surgeon. The size of the hernia defect alone constitutes but one aspect of this complex problem. Additional factors that are known to influence the ultimate outcome in these cases are obesity, loss of tissue as a result of infection, necrosis, repeated attempts at repair and lack of available autogenous tissue for replacement. Various surgical procedures have been evolved and tried during the past ten years to improve the rate of cure for the group of hernias in question. Noteworthy among these are Wagensein's fascia transplants, employment of cutis grafts, mending the defect with autogenous fascial strips or covering the defect with fascial flap or pedicle transplants.

The surgeon practicing in the small or medium sized community hospital is apt to find that the aforementioned procedures are not practical. The necessity for trained surgical teams, the prolonged operating time with its need for skilled anesthetists and necessary specialty knowledge present the average hospital and surgeon with insurmountable barriers.

The recent introduction and application of tantalum gauze mesh in the repair of extensive hernias overcomes most of the objectionable features cited above. The results obtained in hernioplasties with the use of tantalum bids fair to offer the average surgeon an agent that will permit him to undertake the repair of heretofore inoperable ventral hernias without timidity and with a better than average chance for a successful outcome.

Material:

Tantalum* is an element and not an alloy. This property makes it inert and extremely resistant to any disintegrating effect exercised by body fluids or body juices. This is borne out by both experimental and clinical methods.¹ Many other attributes enhance its value from a surgical standpoint. Tantalum possesses high tensile strength, is very malleable, can be drawn into a fine wire or woven into gauze mesh or screen. Koontz and Kimberly¹ have shown the tissue acceptability of this agent and they have emphasized the rapid scar formation that developed when tantalum was placed in the body.

The tantalum gauze employed in this hospital was obtained in sheets measuring 6 inches by 12 inches. These were composed of wire (.003 in.) woven into a mesh 50 x 50. Before placing the screen mesh in the body, it was treated in the manner recommended by the manufacturer.**

The use of metallic adjuncts in the repair of hernias is not new. They have been used for many years in the form of plates, grids, wiring, etc. Most of the metallic agents employed have fallen into disrepute. The reasons leading to their abandonment are classified into three general categories. The electrolytic reactions of these metals with the body fluids and tissue fluids served to bring about their rapid deterioration. The metallic implants lacked pliability and became a source of pain to the patient. Finally, their rapid disintegration and fragmentation induced a foreign body reaction that eventually proved of sufficient severity as to make re-operation for their removal mandatory.

Clinical Application:

Much of the clinical pioneer work with tantalum was done by Lam et al.,² Throckmorton³ and Koontz.⁴ They reported their results using tantalum mesh in the repair of ventral and inguinal hernias in a large series of cases. This led them to conclude that tantalum mesh is a useful adjunct in the repair of hernial defects associated with extensive tissue deficiencies.

A preliminary report of two cases of large incisional hernias with tantalum gauze mesh is herein presented. The simplification of the technique brought about by the employment of tantalum mesh implant in the repair of extensive ventral hernias is well demonstrated.

Case No. 52-109, Mr. A. S.:

A male, 5' 9" tall, weighing 178 lbs. entered the hospital for the repair of a twice recurrent right ventral incisional hernia. This originated in the right rectus incision following cholecystectomy in 1947. Both previous attempts at repair were followed by recurrences within three months of surgery. In the year that preceded his present hospitalization, the patient wore a girdle from morning until night. Daily dressings were necessary to cover the excoriated and weeping skin at the apex of the hernia. The parchment skin mirrored the peristaltic waves of the underlying adherent intestinal loops.

Preoperative preparations were made. An oval incision extended from the right costal margin down-

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* Symbol TA. Atomic Weight 73.

** Ethicon Laboratories, New Brunswick, New Jersey.

ward two inches below the anterior superior spine of ilium. The old scar and areas of excoriated and infected skin were removed en bloc. All adherent intestinal loops were dissected free from the overlying skin and those portions of adherent omentum found within the sac were resected. Excessive and redundant tissues that made up the large fibrous sac were removed. The fascial edges were cleared a distance of 1 to 1½ inches around the entire defect after the skin and subcutaneous tissues had been dissected free from one side of the abdomen to the other in the vertical plane. Free skin mobilization in the horizontal plane extended from the costal margins to within two inches of the symphysis. The right abdominal wall defect measured 9 inches long and 5½ inches wide at the level of the umbilicus. After extensive mobilization of the tissues and fascia-relaxing incisions were made, it was found that closure of the defect could not be affected unless the tissues were united under such extreme tension that it would compromise their successful healing.

The operator concluded that the added number of fascial-relaxing incisions needed to provide an adequate closure of the defect would so weaken the abdominal wall as to vitiate any of the resultant advantages. A substitute transplant to cover an area 6 inches by 3½ inches was necessary if successful closure was to be achieved.

A tantalum gauze mesh was secured over the abdominal defect. The central portion of the implant rested on the peritoneum. Its peripheral part overlaid healthy fascia to the extent of 1 to 1½ inches. The edges of the screen mesh were folded back to provide a two layer cuff of tantalum mesh ½ inch wide. This was done to provide the implant with smooth edges, prevent fraying of its edges, and offer the suture material safe anchorage. Interrupted sutures of monofilament tantalum wire (ooo) were sutured through healthy fascia bordering the hernial defect. The knots were made to lie over the reinforced edges of the screen. Penrose drains were inserted at dependent portions of the wound and the ends brought out through stab wounds outside the line of incision. The skin was united with interrupted silk sutures and subcutaneous directly apposed the top surface of the wire mesh. Pressure dressings with marine sponges were applied.

Post-Operative Course: All drains were removed at the end of three days. Except for two days immediately following surgery, temperature was normal throughout the hospital stay. The incision healed by first intention and the patient was dismissed on the tenth post-operative day. Ambulation was initiated on the first day after surgery. A final check of the patient 4 months later revealed an abdominal wall that was firm and strong with no evidence of recurrence.

This case illustrates advantages of tantalum gauze mesh when the operator needs to mend extensive defects that are associated with tissue deficiencies of considerable magnitude. The metal implant simplified the technical execution of this repair with mutual benefit to both patient and surgeon. It permitted a complete and rapid closure of the abdominal hernia. It avoided the sacrifice of tissues from sound abdominal wall so often invited by the plastic reconstruction procedures.

The second case is cited to show the adaptability of tantalum to the repair of ventral hernias in the presence of infection. It is doubtful if any other form of live tissue transplant or implant could have been equally successful. This important clinical feature of tantalum implant has been emphasized by a number of authors among them Koontz,⁴ Jefferson and Dailey⁵ and Flynn et al.⁶

Case No. 52-44, A. C.:

A male, 5' 9" tall, weighing 192 lbs. had a cholecystectomy performed in 1948. This was followed by an extensive hernia in a right subcostal incision. Repair of the hernia was attempted in 1949 and a left rectus fascial flap was transplanted to the right to reinforce the closure of the defect. Infection and prolonged drainage followed and subsequent recurrence was manifest within three months. Another attempt was made in 1950. Fascial strips were obtained from the right lower rectus and relaxing incisions were used to relieve any tension on the suture line. A second recurrence followed within six months. In 1951 the patient was admitted to the hospital for surgery. At this time a large defect was palpated and it involved the upper right and left quadrants of the abdomen. The patient stated that the multiple skin sinuses were still discharging pieces of silk intermittently and through the past year frank pus was frequently seen on the dressings.

The incision was made to include all sinus openings as well as old scars. The skin and subcutaneous tissues were mobilized from side to side and costal margins to below the umbilicus. The fascial edges were exposed on all sides and the contents of the sac (colon, omentum and a portion of the body of the stomach) were dissected free. The liver was enlarged and studded with nodules as a result of advanced cirrhosis. The redundant fibrous sac was resected and peritoneum closed with chromic catgut. The transversalis fascia, the upper right rectus muscle and the left rectus fascia were, for the most part, obliterated. After complete mobilization of fascial remnants and left rectus muscle tissues, there remained an opening measuring 8 inches long in vertical plane and 4 inches wide in the horizontal plane. A tantalum gauze mesh 6 inches by 12 inches was affixed to the healthy fascial edges (1 to 1½ inches from the edge of the defect)

with monofilament tantalum wire 000. The central portion of the screen mesh laid directly on the closed peritoneal surface. Penrose drains were placed in dependent portions of the wound and brought out through stab wounds. The skin was closed with silk with the subcutaneous layer next to the tantalum mesh implant. Pressure dressings were applied over the operative site. An area of skin measuring 2 by 2½ inches sloughed out on the 8th day post operative, as a result of subcutaneous dissection too close to the skin, leaving a part of the wire screen exposed. The incision drained infected and necrotic tissues for three weeks. On the 15th post-operative day healthy granulation tissue masses were observed growing over the lattice of the wire screen. The patient was dismissed on the 30th day following surgery. Complete healing occurred within 6 weeks of the initial surgery. Three months following surgery the hernia site was strong, firm and exhibited no evidence of recurrence.

No local antiseptic or antibiotics were employed while the wound was open in order to observe the behavior pattern of the tantalum gauze mesh in an infected wound. The healing of the infected wound did not appear to be influenced adversely by the presence of tantalum mesh. On the contrary, the exuberant growth of new tissues observed on the wire mesh would indicate that the implant, by offering a scaffold to growing tissues, may accelerate healing of the wound.

Comments:

Certain precautions are mandatory if tantalum mesh is to be successfully employed. Throckmorton³ has defined these essentials clearly. Inversion of the edges of the mesh is recommended. This serves a dual purpose; namely, the avoidance of any fraying of the edges and a manifold increase in strength at the site of the suture implantation. The metallic implant should be large enough to assure adequate cover and to allow fixation of the mat into healthy fascial tissues bordering the defect without undue tension. Equally important is the use of thread of similar or identical metallic origin. Suturing mesh with metals or alloys other than tantalum wire would tend to create a difference in electric potential and invite electrolytic action on the sutured tissues. The possible painful effects that might result from this agent when sutured to the periosteum of bone should be kept in mind. Flynn et al.⁶ found it necessary to re-operate a few of their cases and the mesh was removed to relieve the patient. The numerous advantages offered by tantalum mesh gauze more than counterbalance its deficiencies. This agent is readily prepared and available to any surgeon. It can be obtained in any size, so that defects of all sizes and shapes can be covered adequately. The mesh need not be overlain with fascia or fascial strips. Good healing occurs without regard to apposing tissues, whether peritoneum, fascia or subcutaneous

tissue. The mesh can be affixed to the edges of the defect with any non-absorbable sutures such as silk or cotton; however, tantalum wire is preferable.

The presence of infection in a wound occurring before or after surgery did not significantly alter the progressive course of wound healing or the ultimate successful result in our case. This was true even though local antibiotics or antiseptics were not employed. The unimpeded growth of granulation tissue over the framework of the tantalum mesh leads us to believe that in the presence of infection tantalum furthers the immediate and ultimate healing process. The detrimental effects incurred by infection in hernioplasties repaired with fascia or cutis grafts are too well known to demand discussion. The absence of complications inherent to live tissue implants such as, inclusion cysts in cutis grafts, or the sloughing of fascial strips or pedicle transplants is not encountered with tantalum.

Tantalum gauze mesh promises to be a useful addition to the surgeon's armamentarium in the field of hernioplasties. It will prove of special value in patients who have submitted to one or more unsuccessful repairs and who were advised to "live with their rupture." This forsaken group evidence an exhaustive tissue breakdown as a result of repeated surgery. Many times this has resulted not only in a progressive enlargement of the original hernia site but in addition a general weakening of multiple areas of the abdominal wall has been produced. Patients falling in this category usually have limited finances and lack the means to undertake a prolonged period of hospitalization whether local or away from home. The trained personnel, skilled knowledge and prolonged operating time demanded by most of the live tissue transplant methods in the more severe cases are rarely available in the smaller communities. Therefore, such patients desirous of a cure were obliged to manage a trip to the larger medical centers for this type of extensive hernioplasty. The surgeon who attempts live tissue transplant hernioplasties in more extensive cases with only limited facilities available, often jeopardizes the ultimate success of the patient's absolute recovery. With tantalum mesh the hopeless hernia cases and the surgeon practicing with average hospital facilities are given the opportunity of surgery with hope of achieving a successful rehabilitation of the incapacitated hernia case. The incidence of recurrence, using tantalum mesh, is less, or at least equal, to any other methods in use today for the repair of extensive hernias.

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REVIEW OF ADRENAL PHYSIOLOGY AND RELATED NEW DRUGS

NORMAN O. GAUVREAU, M. D.*

With the recent discovery of drugs which either stimulate or substitute for the adrenal cortical hormones, there has been a tremendous outpouring of literature which is so overwhelming that one tends to slur over or to miss the essential points of adrenal physiology and the rational therapy directed along these lines.

The following presents nothing new but summarizes the pertinent information in a concise manner that is easily kept in mind.

ADRENAL CORTICAL ACTIVITY

There are three main hormone groups closely related structurally and having overlapping physiological functions.

There are the electrolyte regulating steroids; 11 desoxycorticosterone and the 11,17 desoxysteroids (Compound E and F). The 11 desoxycorticosterone is the most active of the two as far as electrolyte activity is concerned. These hormones cause urinary and sweat retention of Na and Cl, increased urinary excretion of K and increased plasma and extracellular volume.

The next important group are those regulating intermediary metabolism. Here the 11,17 oxysteroids are the most important group but the 11 oxysteroids and corticosterone play some part. These hormones cause increased blood glucose levels and liver glycogen stores, they increase the conversion of protein to carbohydrate by diverting amino acid radicals to pyruvic acid and glucose, they increase the mobilization of depot fat—thus sparing carbohydrate. They cause increased intestinal absorption of fat and increased renal clearance of uric acid. They cause lysis of fixed lymphoid tissue and a transitory decrease in circulating lymphocytes. Finally, they cause a decrease in the amount of circulating eosinophiles. This is a most sensitive reaction and is widely used as a simple test to follow the response of patients in Addison's disease, surgical patients, adrenal disorders and patients receiving adrenal hormone therapy.

The last group is the hormone group whose primary effect is androgenic and anabolic. The most important hormone is androsterone and it causes masculinization as well as retention of N. P, Na and Cl.

The adrenal cortical hormones are released into the circulation as the end result of a series of reactions which starts when the Hypothalamus is stimulated. This stimulation may be artificial, such as the injection

of epinephrine, or it may follow bodily stress such as burns, surgery, excessive anxiety, etc. Graphically it may be shown as follows: Stimulation to hypothalamus anterior pituitary adrenal cortex. The adrenal cortex in turn pours out the above discussed hormones. Administration of whole adrenal cortical extracts or of ACTH (if the adrenals are functioning properly) will result in all of the above actions.

Prolonged administration causes a clinical picture of mild Cushing's syndrome. The value of epinephrine administration to produce hormone changes is limited by the fact that mass stimulation of the hypothalamus, pituitary and adrenals causes a rising titer of adrenal cortical steroids which inhibits the pituitary production of ACTH.

The clinical application of the above discussed hormonal activity is of importance to any man in any field of medicine or surgery.

The two hormones now in use are ACTH and Cortisone. ACTH is the adrenal-stimulating hormone and it is derived from pork, beef and sheep pituitaries. It is a yellow powder, stable when dry and stable 2-4 days in solution. It is available in vials of powder of 10, 15, 25 and 40 mgm. It is diluted with sterile water or saline for intramuscular use only, 1½ to 2 c.c. per dose. It is also available as ACTH gel. The duration of effect for the powder is 4-6 hours and for the gel 12 hours. The initial dosage varies but the average dosage is 10-20 mgm. every 6 hours for the powder and 20-40 mgm. every 12 hours for the gel. The maintenance dose is obtained by reducing the dose 5-10 mgm. but keeping at a six-hour schedule. The average daily dose is 40-80 mgm. When discontinuing the medication it is important to taper off gradually so that the patient's pituitary may accommodate and start producing ACTH of its own.

Cortisone is being synthesized from bile acids. It is a crystal and should not be refrigerated. The preparations available are: 300 mgm. vial 12 c.c., 500 mgm. vial 20 c.c., 25 mgm. tablets for oral use, eye drops of two strengths and 500-800 mgm. pellets. The duration of action is 18-24 hours. The average initial dose is 100 mgm. every 12 hours and the maintenance dose is produced by first lengthening the interval and then lowering the dose. Again one should not stop the drug suddenly, the reason being that the artificial high levels of circulating cortisone inhibit the pituitary production of ACTH and the adrenal cortex not being stimulated temporarily loses its full ability to respond to normal pituitary stimulation.

If response is obtained from these drugs, the results

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are usually apparent after 1-2 gms. of ACTH or 2-4 gms. of Cortisone.

The body responds to the above drugs in the following manner:—The serum sodium and bicarbonate are increased; the serum potassium, calcium, phosphorus and chloride are decreased; there is hyperglycemia, glycosuria, increased fat utilization, negative nitrogen balance, acne and hirsutism. The thyroid activity is decreased. Fibrogen is decreased thus causing a decreased sedimentation rate. The effects on the blood elements are as follows: the bone marrow is slightly stimulated, there is about 3% reticulosis, the red blood cells are slightly increased, the cell fragility is decreased, there is eosinopenia, lymphopenia, neutropenia and some shrinkage of lymphoid tissue.

The clinical criteria of response are decrease in fever, relief of pain, increased appetite, increased weight and increased blood pressure. These are present in febrile illnesses such as rheumatic fever. Other criteria will depend upon the illness; i.e. the wheezing of asthma or the articular manifestations of rheumatoid arthritis.

The laboratory criteria of response may be seen in a decreased eosinophile count, increased blood sugar, glycosuria, increase in 17 ketosteroids, increase in 11 oxysteroids and a decrease in serum uric acid.

The response of ill patients to these drugs will be disappointing in some cases. The more common reasons for failure of these drugs are:—exhaustion of the adrenal gland (ACTH only), recent administration of ACTH with relative insufficiency of the adrenal gland, antibody formation to ACTH, a disease which does not respond to the drugs, or inadequate dosage.

While not too common with proper dosage there are several complications which must be watched for: ACTH is a protein and anaphylactic response has occurred; a psychotic response in persons of unstable personality or disease with brain damage, i.e., Lupus Erythematosus, may occur. The first danger sign is often difficulty in concentrating and then may come euphoria, depressions or mania. The loss of local inflammation which these drugs produce is important for it hinders the formation of the local barrier for defense and infections are allowed to spread. The common signs of inflammation may be absent and an infection may get out of hand simply because no one realizes that an infection is present. The reoccurrence or formation of a new peptic ulcer is not uncommon and the fluid intake below 1800 c.c. Hypopotassemia or rectal bleeding. Retention of sodium and water with hypertension and pulmonary edema can occur if not guarded against, the best preventive treatment being to keep the salt intake below one gram a day and the fluid intake below 1800 c.c. Hypopotassemia may occur; the best treatment is the prophylactic ad-

ministration of 3 Gm. of potassium daily. If deficiency exists you may give 6 Gm. a day. If mercuria diuresis is used, the amount of potassium should be increased. Alkalosis due to hypochloremia is a rare complication; you may find hyperglycemia and glycosuria in a non-diabetic patient or a previously existing diabetes may be aggravated. In either case the condition will respond to insulin and if no pre-existing diabetes was present there will be none after the treatment is discontinued. One may also find changes in the physical appearance such as round shoulder pads, acne, hirsutism, and skin pigmentation.

The cortical hormones in some manner will block the enzyme hyaluronidase, decrease the amount of histamine produced, increase the production of pepsin in the stomach and cause a decrease of lysozyme. These actions explain the effectiveness of the drugs in allergic conditions and acute cases of ulcerative colitis. It also explains the formation of peptic ulcers.

In general, unless the underlying pathology will be helped, the following conditions constitute a contraindication to the use of these drugs: sepsis, psychosis, hypertension, oliguria, Cushing's syndrome and diabetes mellitus.

The drugs under discussion have proved themselves useful to more or less degree in the following conditions:

Addison's disease:—Use Cortisone 12½-15 mgm. a day plus 2½ mgm. of DOCA. It is worthwhile noting that if the adrenal activity is poor you should use small doses to get an effect. If its action is good, you should use large doses. In times of stress you may increase the dose up to 300 mgm. per day.

Idiopathic hypoglycemia:—Use the smallest maintenance dose that is effective.

Pan hypo-pituitarism, primary or secondary:—Use ACTH 5-10 mgm. every 6 hours. May use ACTH gel 10-20 mgm. every 12 hours.

Rheumatic fever—acute and sub-acute:—Treat for forty days with 20 mgm. of ACTH daily.

Anorexia nervosa:—ACTH is useful—not Cortisone.

Rheumatoid arthritis:—ACTH 45 mgm. a day for 21 days or more. Most cases show relapses after the drug is stopped.

Cortisone 100 mgm. a day until symptoms are relieved and then lower the dose to find the minimum effective dose.

Simultaneous use of salicylates allows one to use smaller doses of Cortisone to secure effective relief.

Asthma:—Is usually relieved in 12-36 hours but there is usually a recurrence. It has proved most useful in status asthmaticus.

Gout:—Is relieved promptly but usually recurs when the drug is stopped.

In serum sickness and vaso-motor rhinitis:—Prompt relief is usually obtained.

Drug sensitivity:—Prompt relief is usually obtained but treatment must be continued as long as the offending drug is being given.

In Loeffers syndrome:—Some benefit may be expected.

Allergies:—Of benefit usually. Final results not yet evaluated.

Eye diseases:—Cures most allergic or inflammatory eye diseases. It is used locally one part to four of saline one drop every four hours. Deeper eye inflammatory diseases respond better to both local and systemic use.

Liver disease (Cirrhosis, infectious hepatitis and homologous serum jaundice):—The benefit is not yet established but they should be of some value.

Ulcerative colitis:—The lysozyme titer drops in three days. Other symptoms improve in two weeks. Ulcers clear in three weeks. There is usually a remission but not always. The drugs are especially useful in the acute stage.

Regional enteritis:—The patients improve symptomatically.

Renal disease:—No real value in acute, sub-acute or chronic nephritis. They are of value in nephrosis. ACTH seems to be the best.

Hematological diseases:—In lymphomas they decrease the size of the spleen and glands for six to twelve weeks. The second course of treatment is also usually of benefit.

In leukemias you find remissions in 37% of cases. However, aminopterin and allied drugs work just as well.

Acquired hemolytic anemia patients may be better prepared for surgery by the prior administration of ACTH.

It is of some help in cases of multiple myeloma.

It is counterindicated in sickle cell anemia.

Collagen diseases:—The drugs are of definite help in disseminated lupus erythematosus. They help in dermatomyositis especially when followed by testosterone to help build muscle. In periarteritis nodosa the lesions already present are not helped but there is usually an early remission, followed by a late recurrence.

Surgery:—The drugs have been reported to be of definite benefit both pre-operatively and post-operatively.

Preoperatively the drugs are used on patients with chronic shock and/or diminished adrenal reserve. They are started the day prior to the operation and continued for one week.

In post-operative patients that are doing badly the drugs are of benefit. Follow with the eosinophile count. Give Cortisone first and then on the second day start ACTH and gradually reduce the Cortisone until only the ACTH is being given.

SUMMARY

The drugs are not a specific cure.

They are useful in certain acute cases.

They are not anti-bacterial.

They may cause serious complications.

The contraindications must be known.

Other drugs should be used if they work as well as ACTH or Cortisone.

CARCINOMA OF THE PROSTATE

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The normal prostate is a solid gland about the size of a horse chestnut and surrounds the bladder neck. It may be seen through the cystoscope and palpated through the rectum.

The prostate consists of several lobes; those which immediately surround the bladder neck, the median gland (glands of Alborran), the lateral and the anterior. These may be the site of benign hypertrophy which occurs in 20% of men beyond the age of 60 years. This hypertrophy causes urinary retention which in turn makes life intolerable unless something is done.

There is also a posterior lobe which lies between the urethra and the rectum. Geraghty pointed out many years ago that about 80% of all cases of prostate cancers originate in this lobe. In the remaining 20% of the cases there may be multiple points of origin in any of the lobes.

Prostate carcinomas produce few or no early symptoms. They extend rapidly through the prostate capsule either by lymphatic or perineural invasion. In probably no more than 5% of cases is the carcinoma confined to the prostate when the patient comes to the physician. The lymphatic invasion may be felt rectally beyond the prostate as indurated masses corresponding to the site of either seminal vesicle. Car-

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cinoma of the prostate progressively increases in frequency with each succeeding decade of life. In 1,000 cases of carcinoma of prostate reviewed by Bumpus the average age was 65 years; 495 occurred in patients 60-70 years of age and no case was found under 42 years. A recent survey of hospitalized cancer patients in the State of Connecticut demonstrated that carcinoma of the prostate made up 10% of cases of cancer in male and 4.5% of all cases of cancer. Some mention should be made of the large number of cases of cancer of the prostate which may be found at autopsy by careful examination. The prevalence of carcinoma of the prostate as revealed at autopsy is far in excess of that found clinically. In a post-mortem study of 292 prostates in patients over the age of 50 years (Rich) carcinoma was found in 41 cases (14%). In only 14 of the cases had the carcinoma been recognized clinically. It is the consensus of opinion that prostatic hypertrophy is a separate entity, bearing no causal relation to cancer. The recent abundant literature about cancer of the prostate suggests that there may very well be a hormonal cause for its development. The studies of the excretion of 17 Ketosteroids and estrogens made before and after castration and stilbestrol therapy have introduced confusing data.

GROSS PATHOLOGY

Carcinoma of the prostate most frequently arises from the posterior lobe but rarely involves the median lobe. Over 95% are located in the subcapsular areas. The recognition of early cancer of prostate is the most difficult when it is small and closely resembles normal prostate tissue. A normal prostate is usually gray tinged with light yellow and on cross section is not homogeneous, often showing a clear alveolar network. An early carcinoma often reveals a brighter color ranging from sulfur to butter yellow. In 90 early, microscopically diagnosed carcinomas Gaynor found that 53 presented this yellow appearance. Most of the carcinomas measuring 0.5 c.m. or more were diagnosed grossly. They were fairly firm but not stony hard. A few carcinomas may be very hard because of increased connective tissue content and on section are gray to bluish white in color; only their more homogeneous character can serve to differentiate them from normal prostatic tissue. This variety is not usually recognized until it reaches almost 1 c.m. in diameter. Both types have irregular, poorly defined borders. Small carcinomas may be difficult to differentiate from areas of atrophy, hyperplastic tubercles and small areas of infarction. At times the invasion of the capsule can be observed grossly. Multiple primary carcinomas are quite common within the prostate. The tumors which arise in the anterior lobe tend to remain localized longer and invade more reluctantly. When the tumor arises in the subcapsular

area involvement of the capsule and perineural sheaths occurs early and is often seen in latent carcinomas. The outer capsular layer made up of connective and elastic tissue as well as muscle, prevents further spread. This barrier is particularly efficient in the posterior lobe in the region of Denonvillier's fascia which was infiltrated in only 79 of Gaynor's 232 cases. The spread of tumor to the rectum is also blocked by Denonvillier's fascia. Young found that in 800 patients with carcinoma of the prostate the rectal mucosa was involved in only twelve instances. Local vessel and nerve invasion are common. As the tumor continues to spread it involves the seminal vesicles but seldom affects the urethra. Invasion of the bladder is a late phenomenon but if present then partial or complete block of both ureters with secondary hydronephrosis and pyelonephritis can occur. Prostate stones are only rarely associated with carcinoma. About 50% of the patients with carcinoma have coincident benign prostatic hypertrophy.

METASTATIC SPREAD

The lower lumbar spine, pelvic bones and upper femora are the commonest sites for metastatic disease which reaches these areas through the vertebral vein plexus. These findings are confirmed roentgenologically as typical osteoplastic areas of bone metastases. The overwhelming majority of post-mortem cases show bone involvement, but the number varies with the thoroughness of the examination. In the thirty-eight post-mortem examinations reported by Graves fourteen showed tumor in the lungs and nine in the liver. Metastases to the lungs are often of the lymphangitic variety. All but five had lymph node involvement, particularly of the iliac, supraclavicular, peribronchial aorta and mediastinal nodes.

MICROSCOPIC PATHOLOGY

Carcinomas of the prostate are adenocarcinomas which vary considerably in their appearance. The most common type is the small-cell variety, but the cells may be larger with brightly staining eosinophilic cytoplasm and columnar epithelium. In certain instances the tumor can closely resemble normal prostate tissue. Perineural sheath involvement which is extremely common may be a means of definitely identifying a well differentiated carcinoma when the microscopic diagnosis is in doubt. The small cell type of carcinoma tends to invade and metastasize more quickly than the well differentiated type. Microscopically, islands of metaplastic epithelium can be confused with cancer. Prostate carcinoma changes its microscopic appearance after orchiectomy or stilbestrol therapy. These changes can also be seen in the metastases. Skin metastases have regressed completely under therapy.

A great step forward in understanding the problems of prostatic cancer was made by Huggins in 1941 who reported the beneficial effects of castration. In experimental studies on dogs, it was found that the administration of androgens stimulated prostatic activity and increased the flow of prostatic fluid; administration of Estrogens produced the opposite effect. The administration of androgens caused hyperplasia of the epithelial cells and in some cases metaplasia became so pronounced that the appearance of the gland simulated cancer. When estrogens were administered the glands returned to normal. Huggins showed that after surgical castration, prostatic secretion ceased and epithelial metaplasia regressed.

CLINICAL EVOLUTION

In early carcinoma of the prostate restricted to a single lobe (usually the posterior) and not associated with hypertrophy there are usually no symptoms other than perhaps some form of dysuria.

The initial symptoms of a large group tabulated by Young are as follows:

	Percentage
Frequency of urination,	69
Difficult or painful urination,	43
Pain,	31
Complete urinary retention,	3
Hematuria,	3

The pain, due probably to perineural sheath invasion, is referred to the bladder and urethra, rectum and perineum, sacrum and gluteal region and the legs. It often suggests sciatic pain and is eventually present in most cases.

Unfortunately, the symptoms and signs which are present at first examination are often due to metastases. In 120 patients reported by Graves 81 had metastases (mostly bone) when first seen.

The patients with advanced carcinoma of the prostate often become bed-ridden, develop a pronounced secondary anemia and have considerable pain. The tumor spreads to involve the bladder and signs of renal insufficiency are evident.

DIAGNOSIS

When a patient, usually aged 60 or more, comes to the physician with symptoms of urinary frequency, especially nocturnal, or painful urination, hematuria, pain deep in perineum, or sciatic pain or a combination of these, that patient may have prostatic carcinoma and certainly must be subjected to urologic examination.

A general physical examination usually shows nothing abnormal, with the possible exception in a few cases of a suprapubic tumor, symmetrical and dull on percussion which presumably represents a

full bladder. A next step is visual and microscopic examination of freshly passed urine. If this is clear, sparkling and amber then it contains no blood or pus. Examination of the penis, testicles and palpation of the prostate rectally are done.

A smooth, symmetrical, non-fixed, more or less enlarged prostate with no induration or irregularity makes the diagnosis of carcinoma highly improbable. This sounds extremely easy, yet every urologist acutely recognizes his own frailty and knows that only years of such examinations, each painstakingly compared with the pathologic examination, suffice to make him reasonably sure of his diagnosis.

Cancer produces irregularity, induration, fixation and enlargement either above the prostate or laterally in the regions of the seminal vesicles. After suprapubic prostatectomy for benign hypertrophy, it is not rare for a carcinoma to appear, undoubtedly arising in the remaining posterior lobe and bearing no relation to the previous benign hypertrophy. Relatively infrequent findings are the presence of involved inguinal and supraclavicular lymph nodes and in a few instances transverse myelitis. Pathologic fractures, particularly of femor, vertebrae and ribs may occur.

ROENTGENOLOGIC EXAMINATION

A roentgenologic examination of the skeletal system of every patient with carcinoma of the prostate is indicated with special attention being given to the most common areas of metastases (pelvic bones, sacrum, lumbar spine, femoro, dorsal vertebrae and ribs). Of 593 patients examined by Bumpus, 123 showed involvement of the pelvis and 107 of the vertebrae. Bone metastases are invariably osteoblastic but can be mixed and rather infrequently are osteoblastic.

Distribution of metastasis from carcinoma of the prostate as determined by roentgenographic examination.

(After Graves, R. C., and Miltzer, R. E.: J. Urol., 1935.)

Bones or Organs Involved	No. of Cases	Percentage
Pelvic bones and sacrum	69	85
Lumbar vertebrae	48	59
Dorsal vertebrae	19	23
Cervical vertebrae	3	4
Femora	28	35
Ribs	18	22
"Shoulder girdles"	11	14
Humeri	4	5
Skull	1	1
Lungs	7	9

The metastatic areas may regress under stilbestrol therapy, or after orchectomy show increased density with bone repair, or show both regression and pro-

gression in the same case under androgen control therapy.

The cystoscopic examination is usually postponed for a later date unless the patient is exceptionally hardy or time is limited, and is done either under adequate local or spinal anesthesia. The benign prostate shows regular symmetrical enlargement of the lateral or median lobes. Carcinoma shows irregular enlargement somewhere around the bladder neck or may show actual cancer protruding into the bladder from which a biopsy specimen may be taken.

LABORATORY EXAMINATION

In 1938, the Guttman at Columbia, and Woodard at Memorial Hospital developed chemical tests of the blood of patients with prostatic carcinoma which gave accurate information concerning the primary tumor and its bone metastases.

The most significant laboratory examination is the acid and alkaline phosphatase. Phosphatases are enzymes which in vitro catalyze the separation of phosphoric acid from phosphoric esters. Two enzymes, acid and alkaline phosphatase, are recognizable.

Acid phosphatase is produced in the prostate gland of the adult; Gutman in 1936 observed that tumor cells arising from prostatic epithelium retain the capacity to elaborate this enzyme. Unfortunately, the serum acid phosphatase is not elevated until tumor has extended beyond the prostate. When the test is performed for serum acid phosphatase the upper limit of normal is 3.5 King Armstrong units. Guttman stated that when the level is over 10 K.A. units metastases must be present. This test is specific because no other condition is known which will produce such an elevation. This test should be used in all patients before any therapy is instituted, for if the acid phosphatase is significantly elevated metastases are present whether they can be seen by X-rays or not. Acid phosphatase can be used as a diagnostic measure for obscure bone lesions. Marked elevation of the serum acid phosphatase is pathognomonic of metastasizing prostatic carcinoma.

The alkaline phosphatase is also frequently elevated when metastases to bone are present. However, increase of alkaline phosphatase represents a non-specific response to bone injury, bone growth or attempts at bone repair, and consequently osteoblastic metastases cause elevation; but the serum alkaline phosphatase may be normal with osteolytic metastases. It is also elevated with Paget's disease.

The effect of androgen control in acid and alkaline phosphatase, whether it be by orchectomy or stilbestrol, is interesting. Following castration the acid phosphatase falls precipitously within the first 24 to 48 hours. The alkaline phosphatase falls precipitously

within the first four months because of new bone formation.' As Woodard points out, after four to six months the serum alkaline phosphatase in castrated patients reflects the clinical course rather closely. If metastatic areas undergo healing or remain stationary the alkaline phosphatase is often normal. If, however, new metastatic areas appear or old ones take on activity the serum alkaline phosphatase rises again. Following administration of stilbestrol, the same changes occur except that they are somewhat slower in their evolution. The injection of androgens causes further elevation of the serum acid phosphatase.

BIOPSY

Before beginning treatment of an advanced carcinoma there should be a positive biopsy. If the cancer has originated in the posterior lobe the disease would have to spread over a considerable distance before a positive cystoscopic biopsy could be obtained. It is therefore logical to obtain tissue by an aspiration needle or a Silverman needle. Material obtained by this method is frequently adequate, but if it does not reveal cancer it has no significance. Aspiration biopsy takes skill and experience on the part of the surgeon and likewise the pathologist. In 70-80% of the attempts a good biopsy specimen will be obtained. It is easier to get a specimen from a carcinomatous than a fibrous prostate. This method has been especially valuable in cases of early carcinomas in which diagnosis is most difficult to make.

TREATMENT

There are several methods of treating prostate carcinoma to be used alone or in combination. These different methods are used to attain totally different results which are control (cure) of the carcinoma; control of symptoms, particularly the neuritis of metastasis, sciatic and back pain, loss of weight, and control of urinary retention. The methods include:

1. Total radical perineal prostatectomy.
2. Intraprostatic radon seed implantation.
3. Orchectomy and stilbestrol therapy.
4. Transurethral prostatectomy for urinary retention.
5. Roentgen therapy.

DIFFERENTIAL DIAGNOSIS

With a hard prostate, pain, a demonstration of bone metastases by roentgenologic examination and a high acid phosphatase, the diagnosis of advanced cancer of the prostate is unequivocal.

The differential diagnosis between prostatic hypertrophy and carcinoma may be difficult, for the symptoms of each entity frequently coexist. If the carcinoma is localized, then the indurated nodule can be

a small area of infarction, a calculus or a localized zone of hypertrophy. It is unfortunate that in early carcinoma the acid phosphatase is not diagnostic.

The most important differential roentgenologic diagnostic problem is that of Paget's disease. If the skull shows the typical changes of Paget's, then the other bone lesions are probably due to the same process. In Paget's disease there is a bowing of the long bones without cortical thickening and without reduction of marrow spaces. Rib lesions are usually due to metastatic carcinoma.

It is also possible for the two conditions to coexist.

In osteoblastic metastases and in Paget's disease the alkaline phosphatase is elevated. If the acid phosphatase is also elevated then the bone changes must be due at least in part to metastatic carcinoma from the prostate. In a relatively few instances roentgenologic examination may not suffice to make the diagnosis and a rectal examination and biopsy may become necessary (De Vries). Primary adenocarcinomas of Cowpers gland are extremely rare and are confused with carcinoma of the prostate. The primary symptom is pain in the rectum and perineum with a perineal tumor mass.

Primary carcinoma of the seminal vesicles is extremely rare; the seminal vesicles are frequently secondarily invaded by carcinoma, but it is most unusual to find definite proof of primary involvement with a normal prostate. With primary carcinoma in the vesicles, there is lower urinary tract obstruction, pelvic pain and hematuria. Rectal examination reveals a large, nodular, firm mass in the region of the seminal vesicles.

If carcinoma of the prostate is ever to be cured it has to be radically resected while it is still localized within the prostate. All other treatments are palliative. Unfortunately, the number of cases suitable for surgery is small (less than 5% in most clinics). Young has been the most prominent protagonist of surgery for early carcinoma of the prostate. Approximately 20% of the cases of carcinoma of the prostate seen at his clinic were suitable for operation; this high percentage was undoubtedly due to his prominence as a surgeon and the fact that many early cases were referred to his institution. Young emphasized that the operation must be radical and that any compromise procedure results in a high percentage of local recurrences and ultimate failure.

He insisted on a "radical perineal prostatectomy with removal of the prostatic capsule and the fascia of Denonvillier, the vesical neck, much of the trigone, both seminal vesicles and the ampulla of the vas deferens." The defect is closed by drawing the bladder to the membranous urethra. The operative mortality is low. In 184 patients operated on by the staff of the Brody Urological Institute there were only twelve deaths.

One of the main objections to this operation could be the supposed impairment of urinary control, but in 69 cases analyzed by Colston fifty patients had good urinary control, eleven fair control, and only eight poor control. The operation is not suitable for any patient with advanced disease or with evidence of distant metastases. Neither is it indicated when the patient is in poor general condition, for he is a poor operative risk.

In many instances the presence or absence of carcinoma cannot be determined by physical examination. The tumor should then be exposed by perineal approach and a frozen section diagnosis be made. If there is no evidence of tumor, then the wound should be closed, but if a definite carcinoma is discovered then the radical operation should be carried out. When a frozen section diagnosis is infeasible, the wound should be closed until a paraffin section diagnosis can be made.

INTRAPROSTATIC RADON SEED IMPLANTATION

This method was originated and perfected by Benjamin S. Barringer with the purpose of completely destroying the prostatic cancer in the small number of cases in group I (5%). It was done with the idea of avoiding any major operative procedure. It was done by the open suprapubic method and by the more blind perineal method. The former was given up in favor of the latter as the perineal route was proved to be equally effective and cystectomy was avoided. It was also done with the idea of avoiding any major operative procedure in cases where cure by any method was doubtful. The results of radon implantation therapy have been extremely poor. Barringer has reported from time to time five-year results on all cases and these have been from 5-7%. The patients in whom the radon implantation has succeeded in controlling the cancer probably have more urinary difficulties later, with dysuria and retention, than those who had a radical prostatectomy. This therapy has largely gone into the discard because of the few cases controlled, the difficulties in having adequate radon supplies at hand and the painstaking, persistent work required to treat patients.

TRANSURETHRAL PROSTATECTOMY FOR RETENTION

When there is urinary retention of over 2 ounces or the retention causes distressing symptoms, frequent and painful urination transurethral prostatectomy is indicated.

The instrument used is a modified cystoscope. The operation is particularly valuable in coping with the obstruction in prostatic cancer. Usually there is little shock, mortality is low. Hospital stay is short and it may be repeated if the growing cancer causes more obstruction. Also it gives a specimen for pathologic examination.

ORCHECTOMY AND STILBESTROL THERAPY ANDROGEN CONTROL

Androgen control means either the elimination of testicular androgen production by orchectomy or its neutralization through the administration of estrogens. The exact mechanism of the action of stilbestrol is not known. As soon as the diagnosis of cancer of the prostate is made, a bilateral orchectomy is the most widely accepted treatment. From an analysis of all reports it appears that the most dramatic effects occur with orchectomy, either immediate or delayed, but there is no evidence that orchectomy performed before there is clinical evidence of metastases prevents their later appearances. In executing the orchectomy Chute recommended for psychologic reasons that an intracapsular operation be done. By using this technique the spermatic cord, epididymis and an oval mass formed by the sutured tunica albuginea remain. Olyea believes that the best form of therapy is orchectomy followed by diethylstilbestrol. Some urologists believe that bilateral orchectomy should be delayed until metastases can be recognized, and then stilbestrol should be given only if improvement does not occur.

Stilbestrol is, for the most part, used to complement orchectomy. It is also primarily used for those few patients who refuse orchectomy, but some few authors advocate it as a primary form of therapy. The response to stilbestrol is slower than orchectomy but similar to it. There may be unpleasant side-effects with nausea and vomiting, painful and enlarged breasts, an accumulation of fat about the hips, and a tendency of the body to take on feminine contours. Toxic hepatitis can occur following large doses of diethylstilbestrol (Wattenberg). The proper dosage of stilbestrol is not known but only infrequently do large doses result in a better response than small doses. Ackerman and Del Regato recommend the following:

1. Bilateral orchectomy on all patients whether they have clinical evidence of metastases or not.
2. Administration of stilbestrol in small doses when castration causes hot flashes and other symptoms, or when recurrence of symptoms appear.
3. Administration of stilbestrol as a primary form of treatment in relatively small dose only to those who refuse orchectomy.

The most complete analysis of the effects of the two methods was given by Nesbit who has tabulated the results in 795 patients with prostatic carcinoma treated without endocrine therapy, 75 patients who had surgical castration and 50 patients given stilbestrol by mouth. The patients subjected to orchectomy were followed for forty-eight months and those given stilbestrol for twenty-four months. Comparison of these three series shows that the death rate of both

the orchectomized and stilbestrol patients is much less in every six months' period up to forty-eight and twenty-four months, respectively. This is a startling prolongation of life. Other results of the treatment are quick relief from pain, often in thirty-six hours following the orchectomy and somewhat later after beginning stilbestrol. Frequently, great improvement of the general health, increased weight, regression of metastases to soft parts, particularly to the lungs where large masses have been seen to disappear entirely, follow this form of treatment. In many cases regression of bone metastases may be shown roentgenographically. The primary cancer often shrinks startlingly but there are few data as to any effect on urinary retention. While the effort of stilbestrol is slower there is little difference in the results, with the one exception that with stilbestrol feminization appears about one month after the start of the treatment. The nipples become tender, the breasts enlarge and other feminine characteristics appear.

Unfortunately after varying periods of time, months or one or several years, all patients relapse. This usually begins with a return of the nerve pains. Finally the patient dies. Most urologists believe that one or the other of these methods of therapy should be used and when the patient relapses the other method should be resorted to. Nesbit has reported a patient who failed to benefit under stilbestrol but was completely relieved of symptoms by castration. Ballinger reports a case of a patient whose pains and symptoms were relieved for some months by stilbestrol but relapse occurred and all symptoms returned. He had extensive metastases in nearly all of the bones of his body. Orchectomy caused immediate cessation of his pain and when last heard from, two years after his orchectomy, there had been progressive and remarkable regression of the bone metastases.

It is interesting that the more advanced the disease the greater the extent of metastases, the more severe the pain and prostration, the more startling is the effect of estrogen therapy. However, no one has been able to determine whether or not patients can actually be cured or prostatic cancer by endocrine therapy. This certainly makes us pause and seriously consider the further possibilities of total prostatectomy and radiation therapy.

ROENTGEN THERAPY

External irradiation with 200 KV apparatus was used extensively before the advent of endocrine therapy to control pain caused by the perineural metastatic growth. It has also been used to control the primary and secondary growths of the prostatic carcinoma but has failed to do so. However, a moderate amount of roentgen therapy often controls the pain so characteristic of metastases. At present if the

pain is not controlled by endocrine therapy or recurs after endocrine therapy it is well worth while to try small doses of roentgen therapy for palliation. Using the 200 KV apparatus, 1200 r. may be given in three or four divided doses, 300 r. or 400 r. every other day, at 50 c.m. distance, using a 0.5 c.m. copper and 2.5 c.m. aluminum filter with the appropriate portal.

SARCOMA OF THE PROSTATE

Sarcomas of the prostate are very rare, only about 200 cases having been recorded. They tend to occur in young individuals. Of fifteen leiomyosarcomas summarized by Prince, five occurred in patients under 20 years of age. Rhabdomyosarcomas occur most frequently in boys under 10 years of age (Smith). This highly malignant disease is totally different from prostatic carcinoma.

There are three groups pathologically: leiomyosarcoma and Rhabdomyosarcoma arise from the musculature of the prostate, and lymphosarcoma from the lymphatic tissue. Spindle sarcoma, fibrosarcoma, myxosarcoma, and round and giant cell sarcomas are of undetermined origin. Anaplastic carcinoma is usually grouped clinically with the sarcomas. In 16 cases reported by Ballinger and Stevens most of the patients were young adults, 16 years and over. There is generally a short history of the development of the growth which often nearly fills the rectal lumen. The growth is elastic and regular in contrast to the irregular indurations of prostatic carcinoma. A suprapubic tumor continuous with the prostatic tumor may be present and sometimes generalized lymphadenopathy is present. The differential diagnosis is between sarcoma and prostatic abscess, prostatic carcinoma, bladder tumor, extravascular tumor and cyst.

Aspiration biopsy is of great value. It is extremely important to make a diagnosis before there is any surgical interference. However, most patients are subjected to operation before a diagnosis is made. This practically always assures the death of the patient.

The use of roentgen therapy as a diagnostic test is of value as many of these tumors are radiosensitive. If it is justifiable to wait, treatments by deep roentgen irradiation 300 r. daily to four portals of entry, a total dosage of 1200 r. or more, is given; may produce a marked regression of the tumor in three or four weeks. Aspiration biopsy will reveal a prostatic abscess, a massive calculus or a cyst, all of which have been mistaken for sarcoma.

PROGNOSIS

Colston (1945) reported that between 1904 and 1939 there had been eighty-seven radical operations for carcinoma of the prostate at the Brady Urological

Institute. Of eighty-one patients who survived the operation thirty-one lived five or more years without evidence of recurrence or metastasis, one was living with roentgenologic evidence of metastasis, twenty-nine died with recurrence or metastasis within five years and twelve died of intercurrent disease within five years with no clinical evidence of recurrence or metastases. These are the best figures recorded in the surgical treatment of cancer of the prostate. Any attempt to radicalism of the procedure results in an increased percentage of local recurrences and distant metastases.

Suprapubic prostatectomy cannot result in a cure of carcinoma of the prostate, for it leaves behind the posterior lobe. Endoscopic resection of the advanced carcinoma may be helpful in temporarily relieving obstruction and at times suprapubic cystostomy may have to be resorted to in cases of complete obstruction.

In 485 untreated cases reviewed by Bumpus, the average length of life from the onset of symptoms to death was thirty-one months. Two-thirds of the patients who presented metastases died within nine months and those with no evidence of metastases lived an average of twelve months. It should be emphasized that the duration of carcinoma of the prostate is variable. Some patients having been known to live several years without treatment.

Approximately 80% of the patients respond to androgen control whether it is by orchectomy, stilbestrol or their combination. There is no doubt that androgen therapy does not cure, but it does give very definite palliation.

Huggins has reported five-year results on twenty patients with disseminated prostatic cancer treated by orchectomy. Remissions occurred in eighteen and in four there was no clinical or laboratory evidence of cancer.

If after androgen control a recurrence of symptoms appears the use of other measures such as orchectomy in the primarily treated stilbestrol cases, or stilbestrol in the primary treated orchectomy cases rarely results in further palliation. The majority of the patients with obvious metastases when first seen usually develop signs of recurrence within the first year after treatment. If the acid phosphatase does not fall following castration or the administration of estrogens the course is often unfavorable. The acid phosphatase may also show elevation with further spread of the tumor, but it varies within wide limits and there is no relation between its level and the extent of the metastases. Those cases with soft tissue extensions of tumor and lymph node metastases regress most dramatically. Androgen control therapy should not be withheld from the apparently moribund patient, for sometimes startling restorations to normal activity can occur.

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CLINICO-PATHOLOGICAL EXERCISE

Edited by: R. A. BELIVEAU, M. D., St. Mary's General Hospital, Lewiston, Maine

Patient is a male woodsman, age 55, admitted to the hospital complaining of very severe pain in the epigastrium and vomiting. The onset was sudden at 6 P. M. after a heavy meal of frankfurts and beans. He was seen by a local physician who advised immediate hospitalization.

Past History: Operation 19 years ago for gall bladder. Three months ago he developed severe pain in the abdomen, weakness and jaundice. The condition cleared up after 12 to 14 days. A gastro-intestinal study at that time was reported as negative. Otherwise he had been well until the day of admission.

Physical examination showed a poorly-nourished individual apparently in much pain and with no evidence of jaundice. The head was negative; there was no adenopathy. The breath sounds were clear with no rales and no friction rub. The heart sounds were distinct and no murmurs were heard. The blood pressure was 128/82. The abdomen presented an old well-healed surgical scar, 15 c.m. in length and situated over the gall bladder region. There was marked tenderness and muscle spasticity over the epigastrium, more pronounced to the right of mid-line. Liver and spleen could not be palpated. No masses were felt. The extremities were negative. Temperature 102, pulse 140, respiration 24.

Laboratory findings: Blood: 4,700,000 R.B.C., 11,000 W.B.C. with 72% polys. Urine normal.

Progress: On the morning after admission the vomiting had ceased, rigidity and tenderness had decreased but it was still considered an acute surgical abdomen and an operation was performed. The gall bladder was removed with some difficulty and the incision closed without drainage.

The first few days after operation were uneventful. Then there was a gradual onset of collapse with epigastric pain and vomiting. Intravenous saline was given as well as narcotics. The patient died early in the morning of the 8th hospital day.

The pathological report of the gall bladder was: "The wall and mucosa are thickened and infiltrated with numerous inflammatory cells, lymphocytes predominating. Vessels of the serosa are markedly congested." Diagnosis: Marked chronic cholecystitis.

DISCUSSION

Dr. Edwin Kay: We have here a patient with apparently an acute abdomen, but not in shock. There

is a history of a heavy meal just before the onset. But first of all we must ask: What happened 19 years ago? Did he have an acute gallbladder for which he was operated and the organ only drained? The man is described as "poorly nourished" which makes one think of a neoplasm of some type. I believe that the nature of the onset is against this condition. But taking up a differential diagnosis of the acute abdomen we think of:

A. Acute appendicitis. The blood count and location of pain I think rule out this condition.

B. Acute gall-bladder disease. The organ was removed with no drainage indicating probably that there was no suppuration. Then again our pathological diagnosis is of marked chronic cholecystitis.

C. Perforated ulcer. This is a possibility but apparently none was found at operation. Furthermore we should expect much more evidence of shock.

D. Acute bowel obstruction from volvulus, hernia, or carcinoma.

E. Acute pancreatitis. The cyanosis and the usual pain in the back are not present. Again there is not enough shock.

Then we must think of pneumonia (most often in children who sometimes present a picture of acute abdomen), coronary disease, lead colic, renal colic.

It is possible that we may have here a sloughing of the cystic duct with a spill of bile causing peritonitis.

Finally to come to a conclusion, I believe that our patient died of an acute pancreatitis superimposed on a chronic condition.

Dr. M. Hirshler: We must ask ourselves if there is a connection between this illness and the attack of three months ago. Did he have a common duct stone that became dislodged? I think he died of bile peritonitis.

Dr. L. Sweatt: It is possible that there is a ruptured gastric ulcer into the pancreas, but I believe that there was a "blow-out" after the operation, followed by bile peritonitis.

Dr. A. DuMais: We are apparently dealing with a chronic condition which has suddenly become acute. My diagnosis would be acute pancreatitis with hemorrhagic necrosis or abscess formation.

FINDINGS

Dr. R. A. Beliveau: Abdominal Cavity: Immediately beneath the abdominal wall in the general region of the liver can be seen some light-brown gelatinous

substance which also extends over the surface of the liver beneath the diaphragm. The omentum is directed upward and to the right where it shows several irregular areas of fat necrosis. The transverse colon is plastered over the undersurface of the liver and when separated presents a small amount of brownish cloudy fluid in the general region of the common duct. The remaining portion of the peritoneum is smooth and there are no other masses or adhesions.

Stomach and Intestine: The stomach is somewhat dilated and contains about 200 c.c. of brownish-yellow fluid. The mucosa appears normal except for a few small areas of pinpoint discoloration. The pylorus is open and not thickened. Situated at about the second portion of the duodenum is a small oval ulceration of the mucosa 1 x .8 c.m. in diameter. The edges of this are not raised and there is no evidence of bleeding. The remaining portion of the intestinal tract appears normal.

Microscopic Examination of the duodenum presents the area of erosion described with no attempt at repair. The mucosa is invaded by a moderate number of lymphocytes and the wall, particularly the serosa, presents a diffuse infiltration with many inflammatory cells, polys predominating. There is also a deposit of bile over the surface.

Liver: The organ is not enlarged and is very firm. Its edges are rounded. On section, cut-edges are not everted and the cut-surfaces show numerous areas of dark-red discoloration on an otherwise dark-brown background. The gall bladder shows evidence of recent removal and was described in the surgical report as showing marked chronic inflammation. The common duct is apparently intact.

Microscopic sections show a thickened capsule diffusely infiltrated with numerous lymphocytes and

endothelials. Many of the cells surrounding the central veins are filled with dark-brown coarse granules. There is no increase in fibrous tissue.

First of all, we have a gall bladder previously removed which showed a marked chronic inflammation reaching the serosa, indicating peritonitis. Secondly, we find the microscopic sections of the liver capsule showing thickening and infiltration with lymphocytes, also indicating chronic peritonitis.

We discover some free bile in the region of the operative field and microscopic evidence of bile peritonitis. We also have areas of fat necrosis which presupposes injury to the pancreatic duct and, although that organ shows no suppuration, it is definitely not a normal organ.

We know of a previous operation for gall bladder disease but also know that for some reason it was not removed. Why? Did it present too much inflammatory reaction for proper handling? Did it appear normal and was left in? Did it contain pus and was only drained?

Then, too, we know that bacteria from the gall bladder will invade the ducts and can even go against the current to cause liver abscesses and pancreatic duct infections resulting in fat necrosis.

Thus we have a patient with a known localized peritonitis for some time who has his diseased gall bladder removed and dies in a few days with bile peritonitis and fat necrosis, both recent findings. Although no leakage point for either bile or pancreatic enzymes was present at autopsy, it may be that there was a leak at the time of or immediately after surgery.

The Cause of Death: Hypostatic pneumonia with edema of the lungs due to toxicosis due to cholecystectomy with bile peritonitis and fat necrosis.

Repair of Extensive Ventral Hernias
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MULTIPLE PULMONARY EMBOLI COMPLICATING CONGESTIVE HEART FAILURE*

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A familiar and much belabored subject is brought up only to re-emphasize certain points.

First, the incidence of pulmonary embolism is high in the presence of congestive heart failure. In one large series, well over half of all medical patients with pulmonary embolism had heart disease. Congestive failure was frequent in this group. Incidentally, the incidence of pulmonary embolism in this series was $2\frac{1}{2}$ times greater in medical than in surgical patients.

Second, the diagnosis of this complication is easily and frequently missed. The clinical features of congestive heart failure tend to obscure those of embolism. Recent emphasis of the subject may have resulted in some increase in frequency of diagnosis. However, a report published in 1941 stated that in only 2 of 81 cases of both heart disease and gross pulmonary infarction was the latter diagnosed clinically.

Third, the emboli of congestive failure patients may be more often from obscurer source than the leg veins which are said to be implicated in 95% or so of cases in general with pulmonary embolism.

Fourth, although emboli from sources other than the leg veins are more often not massive, multiple small emboli are especially poorly tolerated by the patient with already embarrassed lungs. Furthermore, the clinical symptoms and signs of small emboli are the more insidious. Pain and hemoptysis are infrequent.

One hundred consecutive adult autopsies performed in 1950 by the Eastern Maine General Hospital Pathology Department, under Dr. Richard Wadsworth, were reviewed. In this group there were 23 patients with pulmonary embolism and in 17 of these, this was considered to be at least an important contributory cause of death. Only 3 of the 23 were post-surgery patients.

Ten patients were considered to have heart disease as the principal diagnosis and of these, 7 had congestive heart failure. It so happens that all seven had small emboli as opposed to massive, and yet in four the multiple small emboli were considered at least a contributory cause of death. In one case the emboli were the only apparent cause of the right heart failure as well as the cause of death. In only one of the group was the diagnosis of embolism made clinically.

In the 100 cases, there was a total of 11 patients considered as having a chief clinical diagnosis of congestive heart failure. Only four failed to show pulmonary emboli. Three of these happened to have been treated with dicumerol and the fourth died on the second hospital day. None of the seven with pulmonary embolism happened to have had anticoagulants. None of this group had surgical vein interruption.

As to source of emboli, no apparent source was noted in 8 of all 23 cases and in 3 of the 7 failure cases. Leg veins were expressed but not dissected. Thrombosis only in the pelvic or prostatic venous plexus was found in 7 of the 23 cases, and in 2 of the 7 failure cases. There were 3 cases with thrombosis only in the right auricle. None of these three happened to have auricular fibrillation. One had empyema in the right chest and one had carcinoma of the lung with metastases, including to the right auricle. The third patient is of particular interest for several reasons. No other primary disease was grossly demonstrable and during the one day of our observation, the rhythm was regular. The right heart failure, as well as death, were attributed to multiple pulmonary embolism. The cause for the thrombosis is not known, although cases have been reported as due to auricular infarction in the absence of ventricular infarction.

In closing, it is only fair to say that no conclusions are to be drawn from this limited study. However, it seems to be apparent that pulmonary embolism is much more frequently found at the autopsy table than it is diagnosed clinically. With an awareness of the condition, the larger, more dramatic episodes provide no great problem in diagnosis. On the other hand, the multiple small emboli, especially those from obscure sources, often are occult. The clear-cut clinical symptoms generally associated with pulmonary embolism are absent and the usual diagnostic measures fail to help in many cases. Whether routine use of anticoagulant treatment is indicated or not in all bed patients with congestive heart failure is beyond the scope of this paper. However, it would seem as if its use should be considered more frequently, particularly in the more seriously ill of this group and in those who do not appear to be responding as quickly as expected to the treatment for the congestive heart failure.

* Presented at the Meeting of the Maine Heart Association, Poland Spring, June 19, 1951.

THE TREATMENT OF SOFT TISSUE INJURY COMPLICATING COMPOUND FRACTURES*

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Much of our present knowledge of the treatment of compound fractures was obtained in World War I from the teachings of Sir Robert Jones, who, it is said, saved thousands of lives and limbs during the war years 1914 to 1918. This keen observer was probably the first to insist upon segregation of fracture patients in special wards and in special fracture hospitals. He laid down many of the general principles which guide us today.

During the same period Dr. Winant Orr of Lincoln, Nebraska, contributed much in consolidating these teachings. He accepted the general principles of Sir Robert Jones, but, in addition, proposed that external fixation of the fractures be carried out. While the general thesis of fixation of limbs in plaster through the medium of skeletal fixation, combined with the plaster in itself, is sound in some cases, this has not been accepted generally by orthopedic surgeons. During the early years of World War II the so-called pinning technique was rather popular and many devices were developed. Suffice it to say that pinning is dangerous unless the most careful surgical principles are carried out and should not be attempted by the inexperienced. But neither should the inexperienced attempt to treat compound fractures.

In World War I, as the older men know, the Carelakin method of daily irrigations was popular. In brief the Orr method resolves itself into primary reduction, the manipulation of the fracture preferably by traction, by the Hawley or other orthopedic table; the insertion of pins above and below the fracture line; and the incorporation of such pins in an adequate plaster cast. As to the soft tissues, it was his teaching that proper debridement be carried out, packing the wound aseptically wide open with vaseline gauze. He insisted that drainage tubes and wicks never be used under any circumstances. The wound was covered in customary fashion and the extremity enclosed in plaster. He emphatically stated that there be no interference with the wound unless the clinical course dictated interference, such as a rise in temperature, increase in white count, or the presence of localized signs of infection. It is quite obvious that by this method there is a minimum of attention required post-operatively and the problem becomes largely a nursing one. In substance, his method is based upon the principles of correct physiology for the limb, rest for the wound, adequate drainage, im-

mobilization of the part, and infrequent dressings. He stated that secondary wound infections are thus minimized and there is great economy of surgical supplies and saving of time for the surgeon and the nursing staff.

Much of our present knowledge in the management of compound fractures is due to the teachings of Dr. J. Trueta, that famous surgeon who gained a well-deserved reputation during the Spanish Civil War. After he left Spain during the latter years of the revolution, he took up residence in England where his influence on the English surgeons during the war years was profound. Doctor Trueta insisted that it was not dangerous to open or enlarge recently inflicted wounds, contrary to earlier teaching. He stated that there was no risk in encasing a well-excised wound in plaster providing that primary suture had not been carried out. He also taught that excision of the wound should not be limited to those seen before infection is established; that it was erroneous to suppose that excision is a highly dangerous procedure once inflammatory reaction of the tissues has been present. He taught further that primary suture was definitely limited to cases managed under ideal conditions in a first class surgical center. In substances he proposed that there be wide excision of all dead and dying tissue, wide exposure of the wound, careful debridement of the skin edges, while saving as much skin as is possible. It was his teaching that muscle which does not react when pinched with forceps must be sacrificed. If there was abnormal color or abnormal blood supply the muscle must be excised completely.

It was his thesis that to be conservative with the limb is to be radical, particularly with the muscle tissue and its aponeurosis. At the same time he insisted that we must be conservative with bone, that large pieces must be saved or delayed union will ensue. He emphasized that all cavities left by the extirpation of soft tissue must be drained if we are to avoid pus formation; that a poorly-drained cavity always collects fluid which sooner or later changes to pus. He emphasized that failures in this treatment must be attributed to faulty technique where the surgeon tries to save muscles and aponeurosis which have been bruised and which are devoid of blood supply.

It is my firm conviction that the "greatest good to the greatest number" can be obtained by adhering to the principles which these three fine surgeons have taught us.

Unfortunately, today there seems to be a tendency

* Read at the Meeting of the Maine Chapter, American College of Surgeons, Belgrade Lakes, June 20, 1951.

** From the Thayer Hospital.

to use antibiotics as a substitute for adequate surgery. Antibiotic therapy is no more a substitute for adequate surgery than a properly fitting cast is a substitute for an inadequate reduction of a fracture. I believe that the proper surgery is in most cases adequate in itself and that the benefit of antibiotic therapy is only supplemental. While usually the outcome of a compound fracture can be prognosticated fairly well by the manner in which the patient's convalescence proceeds for the first several weeks, the prognosis as to bone healing may present quite another problem.

There is a great deal of discussion today as to whether or not the implantation of wire, screws, and plates in a compound fracture is a wise procedure. Generally, the feeling is that no metal should be left uncovered. Sometimes the decision to use or not to use metal fixation is a difficult one to make. Pin transfixion at points away from the wound must be considered. What ever is done the general principle that a compound wound be left open must always be a primary one.

SUMMARY

The concensus of opinion of most surgeons as to the proper treatment of soft tissue wounds complicating fractures is as follows: The proper cleansing of the skin; adequate debridement of skin, subcutaneous tissue and particularly muscle and aponeurosis. The wounds must be thoroughly irrigated, ideal during the whole course of the procedure. The wound should be packed open with vaseline strips so that all cavities drain properly. The question of counterincisions for secondary drainage is one in which good surgical judgement must be exercised. Certain drains when used should not be left over 24 to 48 hours. There must be absolutely no tension on sutures. There must be no tension on fascia, and the use of relaxing incision must always be kept in mind. Skin grafting after healthy granulations have been established must be carried out whenever indicated.

THE TREATMENT OF NEOPLASMS WITH NITROGEN MUSTARDS*

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In December, 1947, supplies of Nitrogen Mustards became available to the Tumor Clinic of the Maine General Hospital from the Committee on Growth, National Research Council and Merck and Company, manufacturers and distributors of the compound. Since that time we have had an opportunity to gain considerable experience with the drug. Although there are many Nitrogen Mustard Compounds,¹⁷ the Methyl-Bis (Beta Chloroethyl) Amine Hydrochloride** variety was the one used. This, in fact, is the type that has been found to be most efficacious in both clinical and laboratory investigations. The purpose of this paper is to report on our general experience with the drug. Detailed case history reports are abundantly available in the medical literature of the past four years and will not regularly be included in this paper. Observations of other investigators^{18, 3, 4, 6, 13, 15} and ourselves indicate the following diseases may respond fairly well to HN2 (abbreviation for Methyl-Bis (Beta-Chloroethyl) Amine Hydrochloride): Hodgkin's granuloma, Hodgkin's sarcoma, polycythemia vera, lymphosarcoma, chronic myelogenous leukemia, mycosis fungoides, follicular lymphoblastoma, and reticulum cell sarcoma. Diseases showing some but less effect from HN2 include chronic lymphatic leukemia, multiple myeloma, bronchogenic carcinoma and primary carcinoma of the

lung. Our policy was not to employ the drug indiscriminately in terminal cases or in cases where preliminary reports in the literature indicated the compounds were of no use, as in carcinoma of the stomach and bowel, acute leukemias, melanotic sarcomas and other neoplasms.

GENERAL DESCRIPTION OF ACTION

Sulphur and Nitrogen Mustards are unique in possessing an effect so similar to that of total body irradiation that they have been called radiomimetic. The effect on individual cells and mammalian tissue is almost identical to that of roentgen rays. In general there are two principal differences.^{9, 20} In the first place animals poisoned with HN2 show a more rapid onset of intoxication; in the second place, there is an earlier recovery period than with X-ray intoxication. Furthermore, HN2 stimulates transmutational effects on chromosomes of *Drosophila* which lead to more frequent mosaics.¹ HN2 will destroy mouse sarcoma 180 growing on the chorioallantoic membrane of a chick embryo without injuring the embryo.^{20, 21} This is not possible with X-ray irradiation. When the hydrochloride salt of nitrogen mustard is dissolved in water it immediately undergoes spontaneous internal molecular rearrangement forming ionizable quaternary ammonium compounds.¹⁴ These cyclic imonium ring compounds represent the active form of the drug which accounts for the therapeutic cytotoxic and

* Tumor Clinic, Maine General Hospital.

** Mechlorethamine hydrochloride (Merck).

mitotic inhibitor effect. The imide reputedly attaches itself to certain protein moieties of cells and enzyme systems and finally leads to cellular disintegration.^{2, 10, 11, 12, 14, 19, 8} The exact manner in which the cell is attacked is not clearly understood. The therapeutic effect of the drug, however, is based on a truly selective sensitivity of certain tissues and structures, as bone marrow and lymph organs, to doses of these beta halogenated alkyl amines which are sublethal for the organism or body as a whole. Proliferative cells affected principally include the lymphocyte and granulocyte of the blood (less so the erythrocyte and megakaryocyte), the mucosal cells of the intestine, the gonadal germinative cells and the basic cell of certain neoplasms including those of lymph tissues, bone marrow elements and lung.^{5, 16} The rapid and spontaneous recovery of the bone marrow from the deleterious effect of nitrogen mustards make possible the employment of single and repetitive doses of the drug of sufficient potency to have definitely supra-lethal effect on the neoplastic cells in question.

TECHNIQUE AND MANNER OF ADMINISTRATION

Without exception, the solution of nitrogen mustard was injected into the rubber infusion tubing carrying a solution of normal saline into the vein of the patient. Employing this technique, only one case of phlebitis was encountered. This occurred in a male patient with advanced superior mediastinal and superior vena caval obstruction from a lymphomatous lesion. The blood flow in the veins of the upper extremities was thought to be slow permitting the drug to cause local irritation of the vein wall in spite of the dilution of the solution. A new vial of the dry, white, freely soluble nitrogen mustard powder was used for each separate treatment, although it has been reported that the imide stage of the compound which forms when the normal saline solution is added may be stable for weeks.²² The dose of nitrogen mustard used was usually 0.1 mg. per kilogram of body weight injected daily on four consecutive days. If the patient was observed to tolerate this amount of drug well, the whole treatment dose was occasionally administered in two or even one injection on subsequent courses of treatment. Complete blood counts were taken daily during the actual treatment, three times a week for two weeks after treatment and twice a week for the third week following the completion of treatment. Nausea and vomiting were frequently present from one to twenty-four hours after each injection. The size of the dose, the therapeutic response, the nature or extent of the disease seemed in no way related to the onset or severity of the nausea. Dramamine* and pyridoxine were of little or no use in avoiding the vomiting. Two patients complained of a disagreeable acrid odor for hours after each

injection. One patient complained of a bad taste in his mouth. The most satisfactory procedure in minimizing the disagreeable effects of the drug included the administration of a heavy dose of morphine sulphate and some barbiturate just prior to the injection. With occasional exceptions, the drug was administered at the patient's bedtime.

Our decision to use a combination of HN2 and X-rays was based on the reports in the literature²⁰ stressing the definitely additive effects of nitrogen mustards and X-ray on mouse survival experiments when HN2 was administered prior to X-rays irradiation. The effect was far less striking when the irradiation was given first. The effect then was far from additive. On a clinical basis, therefore, it seemed reasonable to give two courses of HN2 and a full course of deep therapy each spaced at three-week intervals. The three-week period was considered sufficient for the bone marrow to recover from the injurious effects of the drug. In retrospect, it appears that this three-week period of waiting might be too long to be able to reproduce clinically the same additive effects observed experimentally. At the present time, some clinics²⁶ including the Tumor Clinic at the Maine General Hospital are giving deep therapy within seconds or minutes after the HN2 has been administered. This reproduces more closely the situation in animal experiments. The danger of agranulocytosis and anemia will be definitely greater but therapeutic benefits may well justify the risk. A case of Hodgkin's granuloma treated according to our original plan of two courses of HN2 and one of deep therapy is included to illustrate the beneficial effects obtained in a severe case.

CASE REPORT

N. S., 37-year-old white married male. (Private patient of C. L. H.) Admitted to the Maine General Hospital on November 4, 1948, with a history of onset of "lumps" in neck one year ago, with gradual increase in size of glands and appearance of other ones in both axillae. During the summer of 1948, he noticed that the abdomen was increasing in size and that his breathing was difficult. There was steady, marked increase in symptoms for two months preceding entry into hospital. At the time of entry he had become extremely short of breath and could swallow only liquids. Two months prior to hospitalization he had a cervical node biopsied, the pathological report being "chronic inflammation."

P. E.: Ill-appearing, pale, male, sitting upright on edge of bed breathing with considerable difficulty. Temperature, 99° by mouth; Pulse, 80; Respirations, 26; Blood pressure, 120/70. Body weight, 90.0 kilos. Lips, cyanotic. Hair and face dripping with perspiration. Both sides of neck and supraclavicular

* Dramamine (Dimenhydrinate), G. D. Searle Co.

fossae filled with non-tender glands of variable size, none attached to skin. Glands in both axillae, the larger measuring about 4.5 cm. in diameter. The groins contain chains of confluent nodes, many of which extend to the inner surface of the thigh. Pupils equal and react to L. and A. Sclerae, clear.

Chest: Poor excursion of diaphragms; breath sounds diminished; dull percussion note over both posterior lung fields.

Heart: Rate, 80; rhythm, regular. No organic murmurs audible.

Abdomen: Grossly distended and prominent; superficial veins prominent and distended. Spleen firm and extends 12.6 cm. below the left costal margin. Liver edge extends 20 cm. below the right costal margin. Ascites present. Three plus pitting edema of feet and lower legs.

Laboratory Findings: Hgb., 15.1 gm., 110%; RBC., 4,820,000; WBC., 7,100; MCH, 33; Segmented polys, 50; Lymphocytes, 46; Eosins, 3; Monos, 1. X-ray of chest revealed fluid at both bases with extension into the inter-lobar septum between the right middle and upper lobe. On 11/5/49, a biopsy of a cervical node was done and reported as being "lymphoblastoma of early Hodgkin's type." The clinical diagnosis included advanced Hodgkin's granuloma, Hodgkin's sarcoma or lymphosarcoma.

A daily injection of Nitrogen Mustard was given on four consecutive days totalling 35.5 mg. of the drug. There was no nausea, vomiting or diarrhea following any of the injections. Within seventy-two hours the patient felt subjectively better, could breathe easier and could eat solid food. The glands became softer and in general smaller in size. The spleen and liver did not change in size but were softer on palpation. Objectively there was no improvement in the physical signs in the chest. The lowest follow-up WBC. was 2,900.

Following discharge from the hospital, the dyspnea and orthopnea improved to such an extent that he was able to return to his work after a two-week period. On December 12, 1948, the patient was re-admitted to hospital. Examination at this time revealed soft, poorly circumscribed, glands in the cervical region, in both axillae and groins. The abdomen was soft and relaxed. Spleen extended 5 cm. and liver 8 cm. below costal margins. Poor excursion of the diaphragms persisted. Aeration of lungs was poor. Dull percussion note at both bases. 9.0 mg. Nitrogen Mustard was injected intravenously on four consecutive days for a total of 36.0 mg. of drug. The lowest white blood count occurred 2 days after the last injection of HN2, and was reported as 2,350.

By the middle of January, 1949, there had been a general recurrence of cervical and axillary nodes.

Throughout January and February of 1949, the patient received 200 r to each of 2 portals daily to cervical area and to axillary area, to a total of 1000 r to each portal with the exception of right neck which received 1250 r. 200 r were given to each inguinal region daily for a total of 1000 r to each portal.

During February, the patient received deep therapy to each lateral chest through a 15 x 15 cm. portal, 100 r daily, for a total of 600 r to each side. An additional 800 r were given to each groin including the femoral nodes on the right which were not previously treated. On February 28, 1949, roentgenogram of the chest revealed a definite decrease in fluid especially in the right chest. Following the deep roentgen therapy, the patient did well except for easy fatigability and repeated respiratory infections during which he had a profusely productive cough. Sputa examinations revealed no acid-fast organisms, monilia, torula, or other molds. He was able to return to his work as a carpenter.

During August and September of 1949, small glands re-appeared in the neck, the spleen edge became palpable 5.5 cm. below costal margin, and the liver edge could be felt 5-6 cm. below right costal margin. Confluent glands could be felt in abdomen below the liver edge.

Patient was re-admitted to the hospital in September of 1949, and a total of 36 mg. of Nitrogen Mustard was given over a two-day period. The lowest white blood count following this course of treatment was 2,200. Because of a return of adenopathy and weakness two and a half months after the last HN2 treatment, a course of deep therapy was recommended. Throughout December, 1949, and January, 1950, he received a total of 1000 r to each groin, 750 r to right cervical region, 1300 r to each of 2 abdominal portals, 1500 r to right clavicular portal and 1000 r to each of 2 lateral chest portals. In January, 1950, he received 2 pints of whole blood because of a hemoglobin of 9.3 gm. and a red blood count of 2,740,000.

In April, 1950, he complained of sore, swollen, itchy, inflamed eyes. When examined, his eyes were swollen, his gums infected, his teeth extensively decayed, and there was a draining sinus in the right supraclavicular fossa. The hemoglobin was 9.3 gm., and the white blood count 3,200. Three pints of whole blood were given, and sulfacetimide eye drops were prescribed. The eyes continued to swell during the next few months and by December, 1950, there was extensive edema of both eyelids with definite exophthalmos. On December 11, 1950, a total of 800 r was given to each orbit with excellent results.

By the third week of December, he felt poorly again and developed pleuritic pain in left chest. The abdomen was grossly swollen. He was re-admitted to the hospital where 35.0 mg. of Nitrogen Mustard were given over a two-day period. Three pints of whole

blood were given. Following discharge from the hospital, 600 r of deep therapy was given to the spleen. At the present time he is extremely dyspneic and sweats profusely. The spleen is 3-4 cm. below the left costal margin. There is dullness and absent breath sounds at both bases. The right upper quadrant of the abdomen is occupied by a large liver and multiple confluent abdominal nodes. Deep therapy is to be given in full dosage to the lung fields and the upper abdomen. Present white blood count is 4,450.

Patients with local, limited involvement should be treated with irradiation only, in view of the invariably longer remissions with roentgen ray therapy. Combined therapy does not seem justified in these cases of limited involvement. Nitrogen mustard should be reserved for cases with generalized involvement, marked toxicity and fever, cases with superior mediastinal obstruction and cases that have become "resistant" to X-ray treatment. There is considerable difference of opinion concerning the indications for HN2 in this last group.²³ It should be used in cases which have failed to respond to deep therapy, for it may well be that the HN2 with its widespread effect will reach lesions difficult to localize for adequate radiation localization. Some of the most dramatic results are seen in cases of Hodgkin's disease with high fever and severe constitutional reactions. The temperature has become normal and the general toxic symptoms have disappeared in forty-eight hours after the initial HN2 injection.

COMPLICATIONS AND SEQUELLAE

As previously stated, nausea and vomiting have occurred in 80-85% of cases. Although the nausea and anorexia usually cease within 36-48 hours after the last injection of nitrogen mustard, these unpleasant symptoms have persisted for days in some instances. Diarrhea occasionally follows within 12-24 hours after the treatment. In one case it appeared 72 hours after the fourth injection. Only one case of agranulocytosis following nitrogen mustard therapy has appeared in the literature.²⁷ In our series there have been three instances of serious depression of bone marrow. In each case the patients were critically ill and had to be treated strenuously with antibiotics and whole blood transfusions. Two appearances of agranulocytosis occurred in the same patient, a fifty-year-old white female with malignant lymphoblastoma who was treated with spray X-ray (Heublein technique) following a routine course of HN2. Spray X-ray treatment may thus be hazardous in a patient whose bone marrow has already been insulted with a powerful radiomimetic drug. The third case of agranulocytosis followed a routine course of HN2 consisting of 0.1 mg. of the drug per kilogram of body weight injected on four consecutive days. Phlebitis occurred only once. This was in a

case with slowed venous return in the upper extremities already referred to in this paper. In two instances, extensive deterioration and decay of teeth occurred in patients with advanced Hodgkin's disease. Both patients had received large amounts of nitrogen mustard. One patient, a young girl, received a total of 130 mg. of HN2. This represented 9 full courses of treatment. The second patient received a total of 142 mg. of drug. Although the HN2 cannot be incriminated unequivocally, it seemed to have been the most likely cause of the tooth deterioration. Extensive extractions were carried out on both patients without mishap.

Karnofsky et al.²⁴ have suggested that nitrogen mustard be used in preference to X-ray in dealing with patients suffering from superior mediastinal and vena caval obstruction. Other authors have made the same contention.^{25, 7} The disastrous results of irradiation edema in patients showing dyspnea and orthopnea are well known. The lack of reactional edema following HN2 makes it an ideal form of treatment for these cases. In our series, however, a twenty-one year-old girl with extensive Hodgkin's granuloma died of suffocation following two injections of nitrogen mustard. The patient had extensive mediastinal, paratracheal, and paralaryngeal involvement. The case was written up in detail for proposed publication. In view of the autopsy findings of a severe necrotizing tracheo-bronchitis, it was decided not to publish the case. We sensed a lack of absolute proof that the nitrogen mustard had caused a post-reactional edema leading to fatal strangulation by airway obstruction. The time sequence of events and the emergency bronchoscopic findings however, strongly indicated the drug to be incriminated. In spite of this one case, it seems clear that HN2 is distinctly preferable to roentgen ray therapy in cases with tracheal and laryngeal obstruction.

That nitrogen mustard will not prevent X-ray reactional edema was illustrated clearly in a case of follicular lymphoblastoma with generalized involvement. The patient was thought to have intra or extradural involvement of nerve roots at a level of L 3-4-5. Nitrogen mustard was given in a two-treatment course consisting of 0.2 mg. of drug per kilogram of body weight. Forty-eight hours after the second injection, patient was taken to the deep therapy room and given 250 r to a localized target area directly over L 3-4. Within two hours the patient began to complain of excruciating pain in his back and legs. The pain was not controlled by extraordinary amounts of opiates. Within twelve hours the patient had developed a complete paraplegia of the lower extremities with involvement of bladder. A limited return of sensation and muscle power, especially in the ventro-flexors of the legs, appeared within 72 hours. It was considered that a physiological

transection of the cord had been accomplished by the brisk swelling in a lymphomatous lesion within the bony vertebral column. Since the surrounding bone prevented the lesion swelling centrifugally, the cord in the center of the bony canal was strongly impinged upon giving rise to the neurological signs and symptoms. In one case of Hodgkin's sarcoma, treated with HN₂, the patient died within 72 hours, following two consecutive daily injections of the drug. A temperature of 108°, a failure of renal function with rapidly rising blood urea nitrogen, evidence of extreme toxicity, severe central nervous system irritation leading to generalized convulsions and a remarkably rapid decrease in size of the involved tissues and glands suggested that the patient died of an overwhelming accumulation of the products of cellular breakdown. The case was unusual in that both breasts, both tubes and ovaries, uterus, cervix, thyroid and cervical nodes were involved. The patient was admitted as an emergency with marked difficulty in breathing due to laryngeal obstruction.

SUMMARY

The general experience in the use of Nitrogen Mustards by the Medical division of the Tumor Clinic of Maine General Hospital has been reviewed. The indications, complications, techniques of administration and theoretical considerations have been presented. One case history is included in detail.

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EDITORIAL

American Medical Educational Fund

Representatives of forty state medical associations assembled in Chicago recently to review progress and outline continuing plans for the American Medical Association's fund for resolution of the large annual deficit of the nation's seventy-eight medical schools. Each of the years 1951 and 1952 the parent association has contributed \$500,000 to the Fund while in the first year (1951) physicians individually provided approximately \$250,000. This amount was generous for the first year in view of insufficient publicity, and certain misconceptions and misunderstandings. Several states, notably California, Illinois and Pennsylvania made outstanding gifts. Our own state scarcely

got away from the post being credited with only four contributions totaling \$260.40!

The Council has now authorized a committee with a member from each Councillor District and sub-committee members will be appointed for personal contact work. The campaign will be given adequate publicity and during July and August solicitation will be made. It is expected that the medical fraternity of Maine will accept responsibility in making annual contributions within their means for supplementary aid of medical schools throughout the nation. Failure of our assistance and that of our confreres could mean medical education shackled by federal finance and dictation,—“who pays the piper calls the tune!”

Progress Notes For the Annual Meeting

The Scientific part of the program of the Annual Meeting of the Maine Medical Association to be held at The Samoset, Rockland, June, 22, 23 and 24, is of outstanding interest and may be summarized as follows:

Harry S. N. Green, M. D., Professor of Pathology, Yale University, School of Medicine.

Dr. Green will speak on the tissue culture of malignant tumors, and the importance of this technique in clinical diagnosis of tumors.

John W. Strieder, M. D., Associate Professor of Thoracic Surgery, Harvard Medical School.

Dr. Strieder will speak on the surgical treatment of pulmonary infections. This presentation will be directed toward giving a better understanding of these infections and the rational of their surgical therapy.

George Van S. Smith, M. D., William H. Baker Professor of Gynecology, Harvard Medical School.

Dr. Smith will present some data which he has been gathering on a new topic resulting from research he has been doing on the “Treatment of preeclampsia and eclampsia with penicillin.”

William Stone, Jr., M. D., Staff of the Massachusetts Eye and Ear Infirmary.

Dr. Stone will present some experimental data on “The retention of the incompletely covered foreign body in tissues, with special application to the eye.” He has presented this subject to the General Forum on Fundamental Surgery of the American College of Surgeons and reports indicate this paper has considerable general interest.

Sidney Gellis, M. D., Boston Children's Hospital.

Dr. Gellis will present a paper of current interest to the pediatricians. His topic has not yet been decided upon, but will be one of general interest.

Robert Linton, M. D., Assistant Professor of Clinical Surgery, Harvard Medical School.

Dr. Linton will speak on the diagnosis and treatment of peripheral vascular disease.

This will be in addition to a scientific paper to be presented at the Tuesday evening banquet, the choice of which lies in the capable hands of Dr. Jameson. And, in addition to all this, there will also be an out-

standing program presented by the Medico-legal Society, on June 24, at 2.00 P. M., which follows:

Address by the President of Maine Medical Association.

Short Talks by Attorney General Alexander LaFleur; Chief of State Police, Col. Francis F. McCabe; and one or two others.

Joseph Porter, M. D., Portland, will present studies of burned bodies, with pictures.

Address by a member of the Legal Profession.

LORING W. PRATT, M. D.,
Chairman,
Scientific Committee.

**Colby College and the Thayer Hospital Present Three Lectures
Open to the Medical Profession of Maine**

NEURO-ANATOMY UNDERLYING THE
INTERPRETATION OF CLINICAL
SYMPTOMATOLOGY

Lecturer: Benjamin Spector, M. D.,
Professor of Anatomy,
Tufts College Medical School

Wednesday, April 23

10.30-12.00 *Pain Mechanisms*

2.00- 3.00 *Facial Paralysis*

3.30- 5.00 *Dizziness and Vertigo*

Physicians attending will be guests of Colby College for luncheon and dinner.

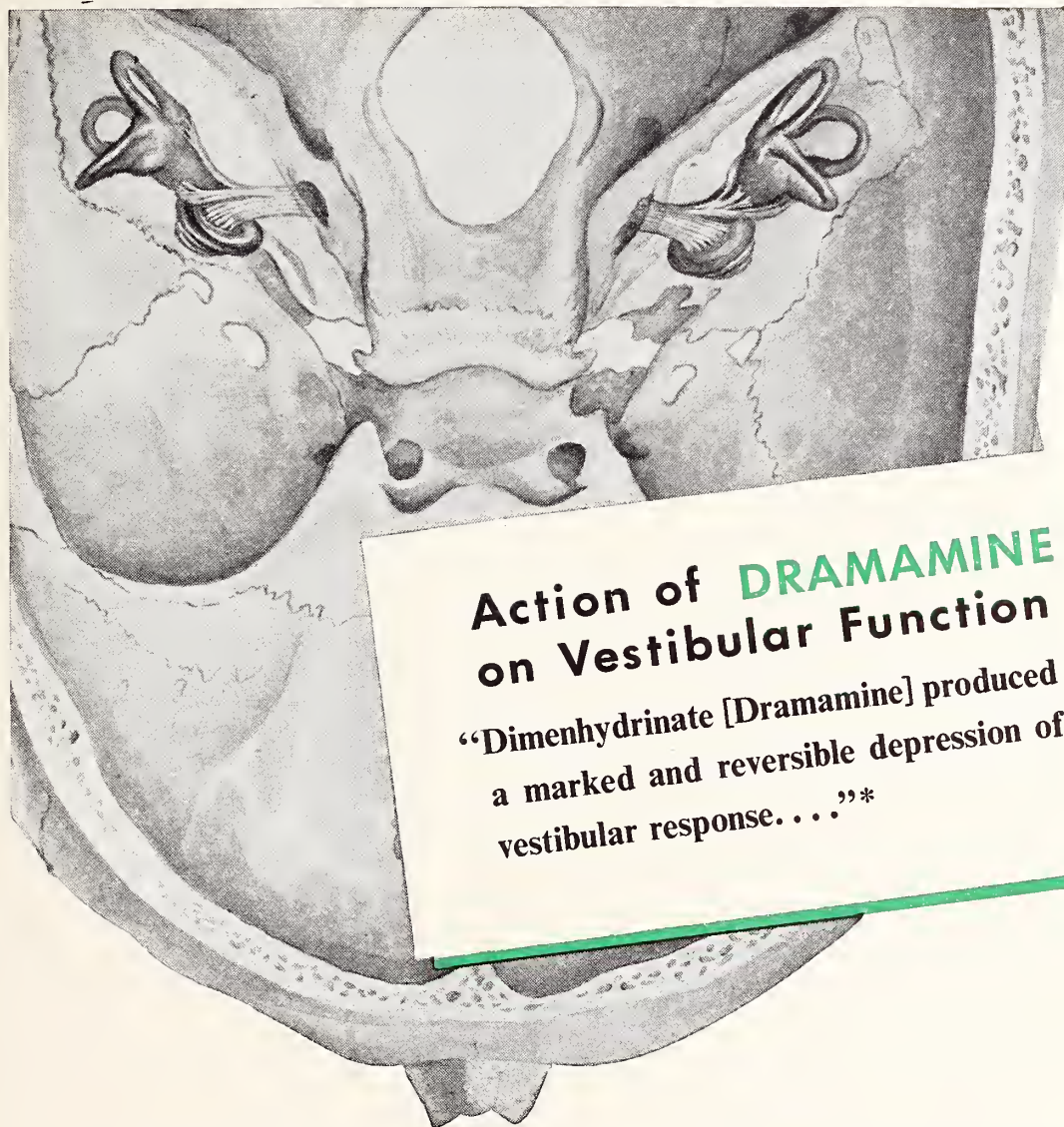
There is no fee for this course. Physicians planning to attend are requested to notify the Department of Public Relations at Colby College, Waterville, Maine, prior to April 15.

HOSPITAL STAFF MEETINGS

Open to the Profession

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital	2nd Thursday
	Notre Dame Hospital	2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General	2nd Thursday
	St. Mary's General	2nd Monday
Portland	Maine Eye and Ear Infirmary	1st Tuesday
	Maine General	2nd Friday
	Mercy	3rd Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Monday
Waterville	Sisters	2nd Tuesday
	Thayer	Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.



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*Gutner, L. B.; Gould, W. J., and Batterman, R. D.: Action of Dimenhydrinate (Dramamine) and Other Drugs on Vestibular Function, Arch. Otolaryng. 53:308 (March) 1951.

RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

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COUNTY SOCIETY NOTES

Cumberland

The annual meeting of the Cumberland County Medical Society was held at the Maine General Hospital on January 24, 1952. It was preceded by an excellent clinic, prepared and conducted by the Staff at the Maine General Hospital. The meeting was called to order by President Theodore M. Stevens and the minutes of the last meeting were read and approved.

Under old business, the Secretary stated that late in November the Portland Chapter of the American Red Cross asked approval of the Cumberland County Medical Society of their blood program to be carried on in Cumberland County and, since no meeting was scheduled for the following month and the Red Cross needed the approval before such time, the officers felt that they could give tentative approval until such time as it could be brought before the Society. Dr. Porter then asked that the statement of this approval be read, and the Secretary then read the following letter: "Mr. Richard H. Pew, Chapter Chairman, American Red Cross, Portland, Maine. Dear Mr. Pew: The officers and Council of the Cumberland County Medical Society fully approve and endorse the blood program as carried on by the American Red Cross of Cumberland County. We understand that this collection of blood is for the Armed Forces only, and that none will be returned to the civilian hospitals."

Dr. Joseph E. Porter then stated that he felt that the public should be made aware of the fact that the Cumberland County Medical Society had approved this program for blood collection over and above a blood collection program to take care of the needs of the Portland area. Dr. Asherman then put this in the form of a motion which was then seconded and carried.

Under new business, the President then appointed the following committees: Committee on Resolutions for Dr. Harry S. Emery: Dr. Richard S. Hawkes, Dr. Theodore C. Bramhall, and Dr. Carl M. Robinson. Committee on Resolutions for Dr. Frederick E. Wheat: Dr. Francis W. Hanlon, Dr. Thor Miller, and Dr. Wilbur F. Leighton. The Committee on Resolutions for Dr. Frank A. Smith: Dr. Horace K. Sowles, Dr. Norman Dyhrberg, and Dr. William Holt.

Under communications, the Secretary then read a letter from Dr. George O. Cummings, which stated in effect, that he felt the Cumberland County Medical Society should have a committee composed of the three previous presidents of the Cumberland County Medical Society, which should act as a committee to review and approve or disapprove of any new clinic contemplated or established in Cumberland County. This was put in the form of a motion, was seconded and carried.

The Treasurer's report for 1951 was then read, and subsequently the report of the Secretary, both of which are incorporated in the records.

The report of the Public Relations Committee was then made by Dr. George Geer. It was brought out that much of the activities of this committee had been with a similar committee of the Portland Medical Club in establishing the now well organized Emergency Medical Service of the City of

Portland. He then brought up the subject of this committee in its capacity of Grievance Committee, and stated that the members of the present Public Relations Committee doubted the advisability of their acting in judgment on their own fellow members, and suggested that this might be better handled at the State level. Some discussion was heard, mostly in favor of this situation being handled locally. However, no vote was taken, and therefore, this duty remained in the hands of the Public Relations Committee.

The Nominating Committee then proposed the following slate of officers:

President, Thomas A. Martin, M. D., Portland.

Vice President, Ervin A. Center, M. D., Steep Falls.

Secretary-Treasurer, Ralf Martin, M. D., Portland.

Delegates to the Maine Medical Association (2 years):

John R. Lincoln, M. D., Portland; Bernerd H. Burbank, M. D., South Portland; Alvin A. Morrison, M. D., Portland; and Emerson H. Drake, M. D., Portland. Alternates: Henry M. Tabachnick, M. D., Portland; Leo J. McDermott, M. D., Portland; Ronald A. Bettie, M. D., Brunswick; and William C. Burrage, M. D., Portland.

Delegates for one year: Charles R. Geer, M. D., Portland; G. E. C. Logan, M. D., Portland; John M. Bischoffberger, M. D., Naples; and Eugene P. McManamy, M. D., Portland. Alternates: Daniel F. Hanley, M. D., Brunswick; Henry A. Hudson, M. D., Bridgton; Ralph Heifetz, M. D., Portland; and Sidney R. Branson, M. D., South Windham.

The Auxiliary Committee of Legislation: Thomas A. Foster, M. D., Portland.

The Committee of Public Relations: Eugene H. Drake, M. D., Portland; Edward A. Greco, M. D., Portland; and James M. Parker, M. D., Portland.

Executive Committee: Theodore M. Stevens, M. D. (3 years), Frank A. Smith, M. D.* (2 years), and Charles H. Gordon, M. D. (1 year).

* Deceased.

Signed: Francis M. Dooley, Joseph E. Porter, Carl E. Dunham, Sidney A. Branson, Charles H. Gordon.

The Chairman of the Nominating Committee, Dr. Charles Gordon, then pointed out that Dr. Smith, who had two more years to serve on the Council had recently expired, and that his position must be filled. The Secretary then proposed that this be filled by extending the terms of the two Senior Council members one additional term. Thus Dr. Porter who would normally retire, as of this date, would serve for one more year; and, Dr. Charles Gordon, who would normally serve one more year, would be asked to serve two years. Dr. Hawkes then put this in the form of a motion, it was duly seconded and carried. Dr. Hawkes then moved that the Secretary cast one ballot for the slate of officers as prepared. This was seconded and carried.

Dr. Stevens then introduced the speaker of the evening, Dr. C. Harold Jameson of Rockland, Maine, President of the Maine Medical Association, who gave an important and interesting address on Medical Ethics.

Respectfully submitted,

RALF MARTIN, M. D.,
Secretary.

Hancock

A regular meeting of the Hancock County Medical Society was held on February 13, 1952, at the Hancock House, Ellsworth, Maine.

The meeting was opened at 8.30 p. m. by Doctor Silas A. Coffin, president. The minutes of the last meeting were read and approved as read.

An advisory committee to the Defense Blood Program in Hancock County was appointed with Dr. James Crowe as chairman.

A very interesting program was given by Dr. Mason Trowbridge of Ellsworth on the Ballistocardiograph; its use and results. The talk was illustrated by numerous slides.

JOSEPH H. HANSON, M. D.,

Secretary.

Kennebec

A regular meeting of the Kennebec County Medical Association was held at the Elmwood Hotel, Waterville, Maine, on January 17, 1952. Dinner was served to thirty-four at 7 p. m, following which President Sleeper opened the business session; the record of the last meeting was read and accepted; Dr. Sleeper stated that this meeting would regularly have been at Augusta but was changed due to a conflict in hotel engagements.

The name of Dean H. Fisher, M. D., was presented as an applicant for membership. F. T. Hill, M. D., remarked that Dr. Fisher was simply coming back home (he was a member in 1948 and 1949) and moved for suspension of the by-laws to enable the association to elect him then: Dr. Hill's motion carried unanimously. Dr. Fisher's application was then (under suspension of the by-laws) presented for membership and he was unanimously elected.

The names of Forrest C. Tyson, M. D., John O. Piper, M. D., and Charles E. G. Shannon, M. D., were elected to Senior membership.

Dr. Sleeper read a letter from the Red Cross asking the Association's endorsement of the Red Cross program for procuring blood for the armed forces only; it was voted to endorse the program.

Dr. Sleeper introduced Dr. Theodore Stevens of Portland whose subject was "Prolonged Labor"—that is labor of over twenty-four hours: incidence is 2-4%—90% of these are due to primary uterine inertia, cephalo-pelvic disproportion or positional dystocia; he discussed these headings—improved prenatal care, antibiotics and chemotherapy and the availability of blood have combined to reduce maternal and fetal morbidity and mortality. Death from puerperal infection has been virtually eliminated by the use of antibiotics—morbidity can be greatly reduced; he spoke of the fourth stage of labor—described the conduct of all stages from the point of view of the treatment of prolonged labor.

After some discussion, adjournment followed.

A. H. MORRELL, M. D.,

Secretary.

Somerset

A regular meeting of the Somerset County Medical Society was held at Dr. George E. Young's cottage, February 26, 1952, at 4.00 p. m.

Dr. Francis McDonald, Pediatrician, Boston, discussed pediatric problems. Cases were presented by Dr. R. P. Laney, Skowhegan, and Dr. J. W. Friend, North Anson. Dr. Irving I. Goodof, Pathologist, Waterville, discussed pathological aspects. There was an additional discussion by Dr. Edmund Ervin, Waterville.

The meeting was very successful. There were 14 members in attendance.

Washington

A regular meeting of the Washington County Medical Society in conjunction with the St. Croix Medical Society was held at the Queen Hotel, St. Stephen, N. B., on Friday, February 1, 1952, with twenty-one members and guests present.

Dr. Esmond Stiles of St. Stephen, N. B., introduced Dr. J. K. Sullivan of St. John, N. B., who spoke on Urological Problems. Dr. Sullivan covered the various aspects of urology particularly those of interest to the general practitioner. He covered the use of some of the newer antibiotics but stressed that in non-specific urethritis local treatment was still of great value and sometimes the only means of cure. He believes that every case of hematuria should be cystoscoped because of the many possible causes of that condition. This was followed by a short period of discussion.

The St. Croix Medical Club were hosts for the social hour following which an excellent meal was served.

Dr. DaCosta Bennett of Lubec, president of the Washington County Medical Society, presided at a business meeting. It was decided to hold the next meeting in Calais, Maine, on April 18.

Dr. Frederick Whitehead, secretary of the New Brunswick Medical Society was present as a guest.

KARL V. LARSON, M. D.,
Secretary.

NECROLOGY

William Lewis Cousins, M. D.

1870 - 1952

In the passing of Doctor Cousins, Portland bids farewell to one of the most colorful personages that this community has known. The present generation of doctors never saw him because, owing to a cerebral accident in 1921 which partially paralyzed his left side, he had been obliged to absent himself from the medical scene for thirty-one years. That is a long time for anyone to have to sit in a chair. It was particularly long for one of this doctor's normally active disposition. Except at the very outset of his illness, when he bitterly resented the blow that had been dealt him, he exhibited a degree of patience with his affliction that was sublime. Constant pain in his left lower extremity made necessary the daily use of opiates which, in turn, made him uncomfortable by beclouding his mental perception, but never a word of complaint did he utter.

He was born in Limington, Maine, but spent most of his boyhood in Steep Falls where his father, Stephen Cousins, was one of the partners in the Cousins and Tucker General Store which sold salt codfish, among other items. It was here that the doctor learned how to make a dollar because, he said, "cod-fish weighed more on rainy days, so I was obliged to work there during damp weather to sell as much water soaked fish as possible."

Later he spent some time at Fryeburg Academy and finally studied medicine at the University of Pennsylvania. Being mechanically inclined and clever with his hands, he took up the study of surgery at the Johns Hopkins Hospital under the tutelage of Doctor Halstead who was one of the Big Four in that institution at that time, the other three being Osler,

Welch and Kelly. In this atmosphere of culture and rare skills he remained for one and one-half years before returning to Portland to become a protegee of the late Doctor Seth Chase Gordon.

After some years as one of the senior surgeons at the Maine General Hospital, Doctor Cousins opened a private hospital about 1906 and called it St. Barnabas. This institution served the public until about 1938 and was one of the very best of its kind in New England.

In the first World War, despite an irascible temper, and a defective heart, and because he was needed in the community, and in spite of the advice of his friends, he felt it his duty to get into the service. The army accepted him with the understanding that he would not be sent overseas. He promptly organized an ambulance unit and went to Camp Devens. In due course he was transferred to Oglethorpe and Camp Gordon where he was head of the Surgical Unit. After two hectic years he was discharged from the service with the rank of Colonel.

Those who knew the doctor can recall his brusque manner at times and his expert use of a choice underground vocabulary. The Portland Medical Club Poet, the late Dr. Dunn, once said of him, "Cousins will rave and tear and swear but underneath all his bluster is a heart as full of tender sympathy as a woman's." He might throw an instrument in the operating room or bawl somebody out. That was the prima donna in him. When he operated, he knew why he was doing it, what to do and how to do it which was what was important.

E. W. GEHRING, M. D.

NEWS AND NOTES

The Maine Diet Manual

The "Maine Diet Manual"—prepared by members of the Maine Dietetic Association, compiled and distributed by the State Department of Health and Welfare, Augusta, may be obtained WITHOUT CHARGE through request to the Department.

This *Manual* contains special diets for hospital and physician use—reprints of which are also available in quantity upon physician request. When ordering the *Manual*, physicians are asked to specify page number and quantities of each diet desired.

Among the diets included in the *Manual* are: Eight diabetic diets; bland—low residue or soft diets; high roughage; low calorie; low fat; low cholesterol; low purine; sodium restricted diets; extra nourishment and pregnancy diets.

The American Congress of Physical Medicine

The 30th annual scientific and clinical session of the American Congress of Physical Medicine will be held on August 25, 26, 27, 28 and 29, 1952, inclusive, at The Roosevelt Hotel, New York, N. Y. Scientific and clinical sessions will be given on the days of August 25, 26, 27, 28 and 29. All sessions will be open to members of the medical profession in good standing with the American Medical Association. In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therapists or the American Occupational Therapy Association. Full information may be obtained by writing to the American Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 2, Illinois.

The Eighth Annual Meeting of The American College of Allergists

The next annual meeting of The American College of Allergists will be held this year at the William Penn Hotel in Pittsburgh, Pennsylvania, on April 7, 8, 9. The College is offering an unusually practical program for its fellows, members and guests.

In addition to 20 addresses on general topics and special scientific investigations, there will be round tables at luncheons and sectional meetings devoted exclusively to the psychosomatic aspects of the allergic patient, allergy in infants and children, allergic manifestations in the skin, as well as those seen in the eye, ear, nose and throat.

An innovation for meetings of allergists will be a session devoted to the problems of the allergic patient as met in modern industrial medicine. All reputable physicians are welcome to attend. For more particulars, write the College, LaSalle Medical Building, Minneapolis 2, Minnesota.

1951 Supplement To "Reviews of Medical Motion Pictures" Now Available

The committee on Medical Motion Pictures has completed the 1951 supplement to the second revised edition of the booklet entitled "Reviews of Medical Motion Pictures." This supplement contains 90 reviews of medical and health films reviewed in *The Journal of the A. M. A.*, from January 1, 1951, through December 31, 1951. Each film has been indexed according to subject matter. The purpose of these reviews is to provide a brief description and an evaluation of motion pictures which are available to the medical profession.

Copies have been sent to the secretary of each of the State Medical Societies. Complimentary copies will be sent to county medical societies and other medical organizations upon request, from: Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Department of Health and Welfare Division of Maternal and Child Health (Including Services for Crippled Children) Clinic Schedule—1952

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: Jan. 14, Feb. 11, Mar. 10, Apr. 14, May 5, June 9, July 14, Aug. 11, Sept. 8, Oct. 13, Nov. 3, Dec. 8.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: Jan. 18, Feb. 15, Mar. 21, Apr. 18, May 16, June 20, July 18, Aug. 15, Sept. 19, Oct. 17, Nov. 14, Dec. 12.

Rumford — Community Hospital, 1.30-3.00 p. m.: Mar. 19, June 18, Sept. 17, Dec. 17.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Feb. 28, Apr. 24, June 26, Aug. 28, Oct. 23, Dec. 18.

Rockland — Knox County Hospital, 1:30-3.00 p. m.: Feb. 21, May 8, Aug. 21, Nov. 13.

Machias — Normal School, 1.30-3.00 p. m.: Feb. 13, Apr. 2, June 11, Aug. 13, Oct. 8, Dec. 10.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.—1.00-3.00 p. m.: Jan. 8, Mar. 12, May 13, July 9, Sept. 9, Nov. 5.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: Mar. 11, July 8, Nov. 4.

Fort Kent — Normal School, 10.00-1.00 p. m.: Jan. 9, May 14, Sept. 10.

Bangor — Eastern Maine General Hospital, 1.30-3.00 p. m.: Jan. 24, Mar. 27, May 22, July 24, Sept. 25, Nov. 20.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: Jan. 25, Feb. 29, Mar. 28, Apr. 25, May 23, June 27, July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

HARD-OF-HEARING CLINICS

Waterville — Thayer Hospital, 1.30-3.30 p. m.: Feb. 20, June 4, Sept. 3, Dec. 3.

PEDIATRIC CLINICS

Bangor — Eastern Maine General Hospital, 1.30 p. m.: Jan. 25, Feb. 29, Mar. 28, Apr. 25, May 23, June 27, July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

Waterville — Thayer Hospital, 1.30 p. m.: Jan. 8, Feb. 5, Mar. 4, Apr. 8, May 6, June 3, July 1, Aug. 5, Sept. 2, Oct. 7, Nov. 4, Dec. 2.

Presque Isle — Northern Maine Sanatorium, 1.30 p. m.: Jan. 23, Mar. 26, May 21, July 23, Sept. 24, Nov. 19.

By appointment only.

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Out-Patient Department, Thayer Hospital. 2nd Thursday, 4th Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Brunswick, Caribou, Farmington, Fort Kent, Houlton, Lincoln, Machias, Old Town, Presque Isle, Rockland, Rumford and South Paris. All clinics are staffed by a psychiatrist and psychologist.

Referrals may be made by private physicians, parents, families, social agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta, where all appointments are made.

Have You Paid Your 1952 County, State and National Dues?

If not — your check for County and State dues should be sent to your County Secretary before April 1st.

Your check for American Medical Association dues should be sent to the Maine Medical Association, 142 High Street, Portland 3, Maine.

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A complete line of laboratory controlled ethical pharmaceuticals. Chemists to the Medical Profession since 1903.

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Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 10.00 A. M., Leon D. Herring, M. D., Director.

Bath Memorial Hospital, Bath, Maine, 2nd Tuesday, 3.00-5.00 P. M., Francis A. Winchenbach, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Waldo A. Clapp, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

Venereal Disease Clinics

The Department of Health and Welfare, Bureau of Health, maintains facilities for the diagnosis and treatment of venereal diseases in the following locations:

Augusta, Bangor, Bath, Belfast, Biddeford,
Lewiston, Portland, Rockland, Rumford,
Sanford, Waterville, Wilton and Winthrop.

Any physician wishing to refer an indigent person for diagnosis or treatment may obtain the name of the nearest clinic physician by contacting the Department of Health and Welfare, Bureau of Health, State House, Augusta, Maine. If no clinic facilities are available, physicians will be authorized to treat indigent patients in their offices. Authorization should be requested before treatment is started.



From where I sit by Joe Marsh

It Isn't the Heat— It's the Hide!

Big discussion after the Grange meeting Friday night. Tik Anderson said that hogs were more affected by the hot weather than cattle. Skeeter Morgan declared that it wasn't so—that he *never* saw any hogs bothered by the hot sun like his cows were.

I was glad when Rusty Robinson stepped in.

"Boys," he says, "don't get so riled up. It all depends on what *color* the livestock are. Hogs or cattle, those with light-colored coats absorb less heat from the sun than animals with dark coats. You're *both* right!"

From where I sit, so many useless arguments could be avoided if a person would remember he doesn't have all the right on his side. Like those who would tell others how to practice their profession—like those who would insist that coffee, for instance, is the only drink, forgetting that other people have a right to a glass of beer now and then. If we wouldn't get so "het up" about our prejudices—we'd all be better off!

Joe Marsh

citrus is virtually
NON-ALLERGENIC



TYPICAL PATCH TEST

Over 400 infants and children from 2 weeks to 6 years of age acted as test subjects to check the incidence of sensitivity to orange juice. After 2 to 12 months' observation,* "no disturbance of bowel function (diarrhea or constipation) that could be attributed to the orange juice" was found. Also, the occurrence of regurgitation and rashes was "minimal". In the rare instances of sensitivity, care exercised by gentle reaming of juice (or the use of frozen concentrate) to avoid contamination with peel oil usually obviates the difficulty.

**J. Pediat. 39:325, 1951*

FLORIDA CITRUS COMMISSION • LAKELAND, FLORIDA

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No. 4

PUBLIC HEALTH*

C. HAROLD JAMESON, M. D., Rockland, Maine

The Council of Medical Education and Hospitals of the American Medical Association in its recently revised standards of December, 1951, made the following statement dealing with the plan of the medical curriculum for medical schools: "The students should also be made fully aware of the social aspects of medicine and of the role of medicine in the community." The last sentence I take to refer in particular to a new emphasis upon the physician's important relation to matters of communal or public health.

In his keynote address at the A. M. A. public relations conference in December, 1951, Dr. Louis Bauer,¹ among six important projects for 1952, urged that physicians should actively enter into community activities, aid in the solution of local health problems and coöperate with local health councils to improve existing health facilities. He called for unified efforts of individual doctors and county and state societies to strive for improvement in public relations goals to prove to the general public that their interests were broadly diversified.

In these years of advancing socialistic trends with only momentary quiescence in the demands of powerful proponents for the socialization of medicine itself, it behooves all of us, proud of the progress of American medicine, to maintain and further its principles and to regain and augment the prestige of the system with the general public.

The average physician is an individualist. His instincts, his training, his interest in the personal wel-

fare of the patient with restoration to health and recovery of earning capacity commands an intimate application of waking hours to widely diversified problems. Determination to keep himself alert to the constant advances in the field of professional interests by reading current medical literature, attendance upon clinics and medical meetings, very likely occasional post-graduate refresher courses — emphasis upon which has been much sharpened in the past decade — all these require close rationing of available hours. However his interest in community health problems cannot be doubted and can be stimulated by those agencies whose vision entitles them leadership. In short the physician has devoted himself whole-heartedly and effectively to the intelligent, progressively improved management of the sick individual and to the rehabilitation of the convalescent and injured unfortunate until he has built up the most efficient system in the world for medical care.

In the more youthful field of Public Health, the primary concern has been with the health of the community as a whole, with the "aggregate of the people living under some unit of local government — its employees engaged to apply knowledge to prevention of disease as it effects the people as a whole." Six functions of public health services are enumerated by Haven Emerson² as follows:

- (1) Vital Statistics — Registration of births, deaths and notifiable diseases.
- (2) Control of communicable diseases.
- (3) Control of environmental sanitation (air, food, water and occupational surroundings).

* An address to The Health Council of Maine, March 26, 1952.

- (4) Maternal and child hygiene.
- (5) Provision of public health laboratory services.
- (6) Public Health education.

Emerson declares "The quality of public services provided by a local government is the best index of the intelligence and imagination of any community" and further "communities of less than 50,000 persons can rarely afford a good local health department."

The authoritative voice of Simmons³ extols the importance of the field of Public Health and its functions in the following: "The medical challenge is neither socialized medicine nor compulsory health insurance but to strengthen our total health defenses in the shortest possible time." He outlines the opportunities for prevention in the fields of communicable disease, respiratory, insect borne and intestinal groups of infection, chronic degenerative diseases, accidents and mental disease — all contributing to the enormous national bill for medical care and hospitalization. In an address on Health and Manpower he utters a strong statement of rich import, "This matter of American Health and Manpower (in peace or war) is not something nice we'd like to have. It's a necessity — and we've got to have it" and "through health we can defeat communism."

Much of the foregoing evolves from reflections upon the interrelations of a public health department and the practicing physician. From my observations as well as from the statement of Haven Emerson it becomes evident that in Maine the great majority of communities must be largely dependent upon the State Department of Health for leadership in the six fields of fundamental importance to community health. I am aware of the tact, initiative and know-how possessed by the present director of the department and believe that through coöperative action with the strategically dispersed physicians desired projects can be undertaken with every prospect of betterment in community health.

While modern methods require mass interest for success, I am a firm believer in individual influence. The presence of an enthusiastic physician in a community can determine the initiation of a program of communal health improvement. I have been impressed recently by an article on *The Personal Practice of Freedom*⁴ emphasizing the power of individual influence. "There is no printed plan or program or idea on earth which has half the conviction which you can achieve among your own friends and neighbors by your personal influence. Your voice among those you know has possibilities with which ink and paper and radio waves cannot successfully compete."

Specifically I would offer for your consideration several avenues of approach wherein the department of health aided and abetted by the practitioner of

medicine would accomplish progress toward these worthwhile goals in which our joint interests are primary. Some of them no doubt are already brewing in the active mind of the commissioner; others are presently in operation within the confines of the state. Every agency here represented would play an essential role if not leadership in these projects.

At any rate without claim of originality, let me offer these ideas of procedure cementing the dual functions of the medical practitioner with the specialized talents of these coöperating agencies. I realize that specific functions of the Public Health Department previously tabulated are being exercised with indispensable benefits to the citizens of Maine; and that appreciation of the value of such major contribution is registered by the medical profession with no doubt adequate co-operation. The first three of these suggestions will be outlined briefly to permit larger consideration of the fourth and perhaps more important proposal.

That the community hospital is increasingly assuming the role of leadership in matters of health cannot be denied. Wherever such is not the case, opportunities are being overlooked. I refer not only to adequate and improved medical care but to the essential field of health education. I would advocate through joint coöperation of all agencies the presentation of lectures by authoritative speakers on informative subjects in the field of preventive medicine. The public loves to be alerted in the field of medicine and may better be offered sound instruction than find readily available misinformation elsewhere. The several units might be stimulated to aggressive efforts to make the community hospital more than ever the focal point of radiating influence for better health through social service activity, improved public relations, continuing and widening where possible the scope of its clinics (heart, cancer, crippled children, tuberculosis, blood donor, dental, well-child and pre-natal), medical staff participation in public lectures, stimulation of volunteer workers group, career days and no doubt other features. Maximum efforts to these several ends will be richly rewarded.

I would advocate for county medical societies at least one program each year dedicated to a subject in the field of preventive medicine. I doubt if any province in the field of medical science is more smoothly bi-passed. With the coöperation of the department of public health there should accrue mutual benefit adding up to a new interest in preventive medicine with the general public reaping dividends. My conversations with the director have made me public health conscious and anxious for the county societies to take advantage of what he can help to accomplish.

No doubt in most counties in the state we as physicians are conscious of certain fields in which we are

desirous of giving improved service. Our individual attempts to increase our own aptitudes give expression to this attitude. On the broader level of community problems, the department of public health becomes of utmost importance as a natural sequence of the closer coöperation to be gained once the suggestions voiced in the foregoing paragraph be followed out. There should be forthcoming a consultative relationship of definite benefit. There should be no iron curtain between the practicing physician and the department of health whose aims and objects are unified. Emerging from the foregoing emanates the conception of the role of the department as a guide to interpret and crystalize particular community needs. Recently, John Cline, President of the A. M. A.⁵ has hailed the work of Aubrey D. Gates for betterment of Rural Health. Surveys of this kind could be most helpful in many towns and counties of this state.

The final recommendation permits me to express a thought long in mind. To a group such as this with diversified special interests intimately unified in behalf of community health I feel fortunate to appeal as well as to the representatives of the group who carry on the work of the voluntary charitable agencies. All of us together can if we will integrate forces to accomplish a large purpose. I refer now to the matter of mental health in the State of Maine.

In his recent book on Basic Psychiatry, Strecker⁶ calls attention to the ubiquitous presence of the mentally ill. He tells us that one child of every 20 born is destined to spend some portion of his life in a mental hospital; that one in ten will be more or less incapacitated by mental breakdown. Selective service examinations indicate that 5,000,000 of our population suffer from psychoneurosis or some form of functional mental illnesses. Most of us know people who drink too much alcohol. Minimum estimates give a figure of 2,000,000 chronic alcoholics, other figures being much higher. The group of mental defectives comprises a figure of almost incredible proportions (3,500,000) while seven million citizens have criminal records and more than a million children annually pass through the criminal courts. "As long as we suffer from the evils of ignorance of the psychiatric problem, we shall continue to pay economically back-breaking tribute for the care of a huge increment of chronic mental and nervous illness, much of which could have been prevented." The importance is emphasized of obtaining emotional security for more people with the nucleus inculcated in childhood. Strecker quotes Leon Saul to the effect that emotional security is "the basis of mental health, or morality and ethics of social security — and is the healthy long range answer to mankind's central problem, namely man's inhumanity to man. What helps children develop normally toward emotional maturity,

helps mankind make peace and brotherhood into realities."

Simmons⁷ points out the major importance of mental disease in the nation's bill for medical care and hospitalization. He states that one-quarter of the patients in general hospitals are there because of emotional reactions. 300,000 people enter mental hospitals annually (Menninger) and 3,000,000 American children have emotional and behavior disorders.

At the New Haven Hospital⁸ recently a survey of fifty patients in a general medical out-patient clinic found 72% without somatic disease but definitely suffering some degree of mental illness which would benefit by further study and treatment.

In our own state we live under lesser emotional stresses. My own observations, however, substantiate Strecker's statement that the mentally sick surround us. The problem of what to do with cases of mental sickness must confound many a practicing physician. I have embraced the opportunity of inspecting the humanely directed and excellently equipped mental hospital at Augusta. The large population there and at the Bangor State Hospital with institutions of lesser size elsewhere presents a significant quota of advanced mental disease in our own state.

Not long since one of our well circulated newspapers reviewed the status of a general hospital in the state with a sixteen-bed annex for mental, senile and alcoholic patients! An editorial⁹ reviewed the status of mental health in the most populous city of our state citing inadequate facilities for the care of these unfortunate citizens. This editorial concluded with a quotation from the report of the Greater Portland Council of Social Agencies, "The mental health of a community depends on the mental health of each person in it, and those enjoying good mental health should accept their social responsibility for improving the mental health of the whole community by making clinical service available to those who need it."

I have been increasingly conscious of a need in this state for facilities to recognize and treat emotionally unstable children, psychoneurotics and the mentally ill in their incipient stages. The need may be greater than I and the majority of our citizens appreciate. Many of you, in the group here present, are in position to appreciate the importance of the problem. I can conceive of no more worthwhile project to which we can dedicate ourselves than to survey this problem and express its real proportions to the citizens of the state. Our joint interests should create a task force equal to this important undertaking.

Perhaps sufficient data is at hand from which we can appreciate the problem, but if not I think it should be obtained. Once the importance of augmented facilities for treatment of early mental disease is recognized and demonstrated then the means of carrying

forward a practical plan of procedure may be devised by wiser heads than my own; but, convinced of the need, I have envisioned the inception of an Institute of Mental Health,¹⁰ established because of a demonstrated state-wide need, financed by private philanthropy, staffed by competent psychiatrists and located centrally and strategically, with the firm expectation of one or more subordinate branches stemming from the parent foundation as its utility becomes appreciated.

You who are component parts of the Maine Health Council are widely representative of the health interests of the state. Your opportunities for observation are widely dispersed. Your reaction to the suggestion will be well defined and I hope favorable. I urge your thoughtful consideration of design worthy of the studied attention of a group interested in the problem of community health, physical and mental.

These suggestions are those of an individual physician voicing a few ideas which might occupy the interest of the several agencies here represented. We can no longer afford to avert our faces from the mentally distressed among us. This group must expand into other groups which will think and talk and act. Maine must look to such groups for leadership in facing the

mental health problem as quickly and as intelligently as other States have faced it. If and when they do so, prompt help, new hope and restored health may come within reach of the one in twenty among our kin and friends who may be stricken.

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PULMONARY EMBOLISM BY AMNIOTIC FLUID WITH SEVERE HEMORRHAGIC MANIFESTATIONS*

FRANCIS M. DOOLEY, M. D., and GERALD C. LEARY, M. D., Portland, Maine

During the past fifty years, there has been noted many times, obstetric death in shock or following shock. Some of these patients also had post-partum hemorrhage and in not a few instances pulmonary edema was observed terminally. At first attention was directed to instances of abruptio placentae and the various types of placenta praevia as the main causes of death. As early as 1901, DeLee¹ had noted that the "shock" appeared to be of an anaphylactic type and the hemorrhagic manifestation he called "a temporary hemophilia."

Intensive investigation of the coagulation of the blood has revealed interesting facts regarding the thromboplastic activity of placental extracts^{2, 3, 4} and of amniotic fluid itself.⁵⁻¹¹ This thromboplastic activity is so powerful in certain cases as to result in a partial or total consumption of fibrinogen in the circulating blood leading to a corresponding degree of defibrination.

This presentation is not concerned with the role of placental detritus or "native extractions of placental tissue"^{2, 3, 4} as causes or accompaniments of complications of late pregnancy, but rather with the role of amniotic fluid in producing a lethal outcome in what should otherwise have been a normal labor at term with a happy result.^{7, 8, 9, 10, 11}

Steiner and Lushbaugh⁸ in 1941 called attention to the syndrome of "maternal pulmonary embolism by amniotic fluid as a cause of obstetric shock." In a very thorough manner they presented (a) the findings of eight autopsies on patients dying of this malady; (b) indicated the clinical course of the disease; (c) established criteria for the evaluation of the pathological entities concerned and (d) pointed out certain mechanisms of causation requiring further elucidation.

Since there have been presented thus far only about thirty cases of this disorder, substantiated by pathological diagnosis, there appears to be some justification for the following report and the subsequent remarks.

* From the Departments of Obstetrics and Pathology of Mercy Hospital, Portland, Maine.

CASE REPORT

Clinical History: L. B., 29 years old, white secundigravida entered Mercy Hospital, Portland, at 8:45 P. M., on November 30, 1951. Her first pregnancy and labor five years previously were uneventful. The prenatal course was not remarkable; the weight gain 27 lbs. Blood pressure averaged 122/82; hemoglobin averaged 85% and urine was consistently negative. There had been no interim illnesses. Admission note indicates that the membranes had ruptured about forty-five minutes previously and prior to the onset of labor pains; that there had been a moderate bloody show coincident with the membrane rupture; that pains supervened very shortly thereafter; T. 98.6-P. 80, R. 20 and B. P. 130/92; fetal heart 136 in L. L. Q. At 9:15 P. M., pains were strong at intervals of 5' x 30". Nembutal gr. III administered at 9:50. At 10:39 pains were progressing every three minutes and at this time Demarol 100 mg. and Scopolamine gr. 1/150 were given. At 10:45 the patient complained of difficulty in breathing and promptly went into generalized convulsions, became cyanotic, hyperpneic, pulseless and with no blood pressure. By 11:30 following the administration of magnesium sulphate, five c.c. Digitaline Nativele intravenously and oxygen, the patient began to rally; the radial pulse was 136 and B. P. 116/0. Simultaneously there appeared red blood from the mouth, numerous rapidly spreading ecchymoses on the abdomen, chest, back, arms and legs, and a massive submucous and subcutaneous extravasation of blood involving all vaginal walls, perineum and inner right thigh to four inches below Poupart's ligament. All needle punctures oozed constantly and a large hematoma formed alongside the intravenous needle. No pulmonary edema was noted at this time. At 11:55 a still-born female infant, weighing 8 lbs. 3½ ounces was delivered spontaneously. At 12:10 A. M. the placenta was delivered intact following normal separation. There was no retroplacental clot. Following the third stage of labor there was a constant trickle of liquid blood from the vagina despite a moderately well contracted uterus. Considering a possible laceration of uterine vessels high in the vault as a cause of the vaginal submucous bleeding and of the persistence of visible bleeding, the entire circumference of the cervix was visualized with difficulty. No laceration was found and a vaginal pack was inserted. During all this time the patient remained hyperpneic and moderately cyanotic, complaining of severe headache and stiff neck. Blood taken for cross matching (post partum) showed Rbc. 3,700,000 and Hemoglobin of 65% and a Type B. Rh Positive. Despite whole blood, plasma, fluid, synkavite and supportive measures, massive pulmonary edema and coma occurred and the patient died at 2:02 A. M., three hours and seventeen minutes after initial shock.

Immediately post mortem, a lumbar puncture was done to eliminate the possibility of subarachnoid hemorrhage as a factor in the complaint of headache and stiff neck; the neck had become quite rigid during the last thirty minutes of life. The cerebrospinal fluid was clear. No other tests were performed. The cross matching blood sample, without added anticoagulant, remained unclotted at the end of sixteen hours. A gross test with Bovine Thrombin failed to produce fibrin and the stained smear showed normal appearing red cells but an almost complete absence of platelets. Examination of a specimen of urine (catheterized post partum) gave a trace of albumin and was grossly bloody. Unfortunately the blood was not checked for a circulating lysin.

NECROPSY AND PATHOLOGICAL REPORT

The patient was obese. Numerous petechiae were present, most marked over the abdomen. Extensive ecchymoses were visible in the vagina and perineum. Approximately 40 c.c. of light brown fluid was present in the peritoneal cavity. Purpuric spots were noted on the surface of the large boggy uterus. No free fluid was present in the pleural cavities. The pulmonary artery opened in situ contained no ante mortem thrombi. The right lung weighed 500 grams, the left 425 grams. The trachea and bronchi were filled with frothy bloody fluid. The cut surfaces of the lungs were congested and edematous.

A noteworthy finding was the complete absence of post mortem clots in the vessels or heart chambers.

The spleen was enlarged, weighing 225 grams. The cut surfaces were red and soft. A superficial tear of the uterine canal involving the lower portion of the uterus extended into the cervix. The cervix was very thin.

The remainder of the gross examination was negative including the brain.

Microscopic Examination:

The only abnormal findings were confined to the lungs and uterus. The lungs were markedly edematous. Many of the capillaries, arterioles, and large veins contained large numbers of leukocytes. Some of the capillaries and veins were relatively bloodless and contained foreign particles consisting of squamæ, mucus, granular eosinophilic material occasionally containing vacuoles suggesting fat, and thin eosinophilic staining structures resembling lanugo. Fat and mucin stains disclosed the presence of both in many vessels. The particulate material in this case was quite widespread occurring in many vessels including capillaries, arterioles and occasionally fairly large veins.

The sections in the region of the laceration of the

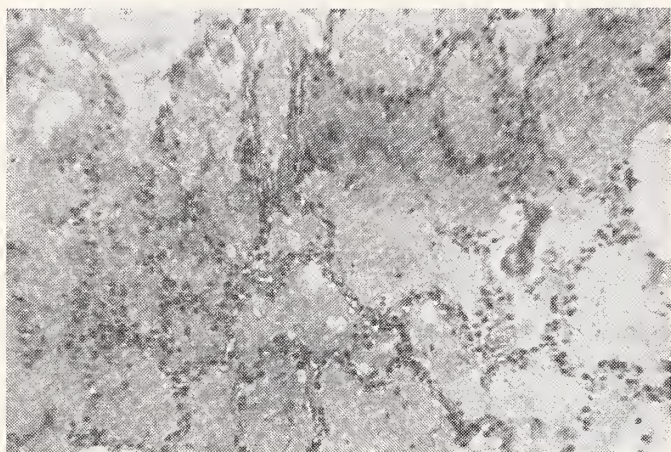


Fig. 1. The alveoli are filled with edema fluid.

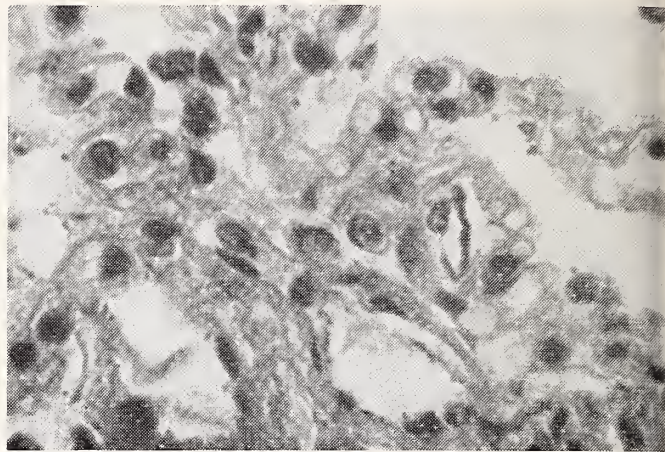


Fig. 4. Capillary containing squamae.

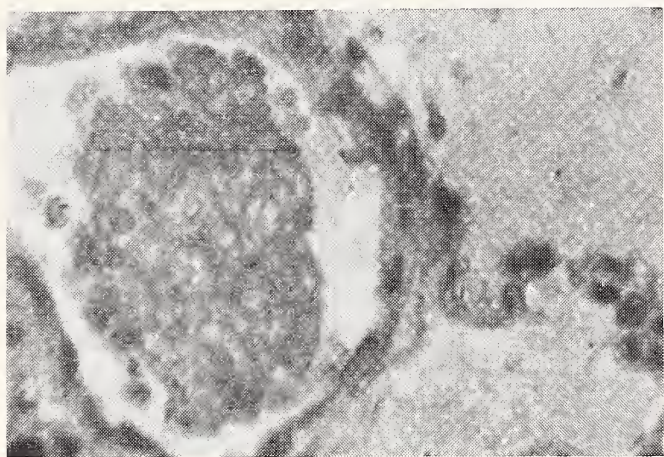


Fig. 2. Pulmonary arteriole containing mucus.

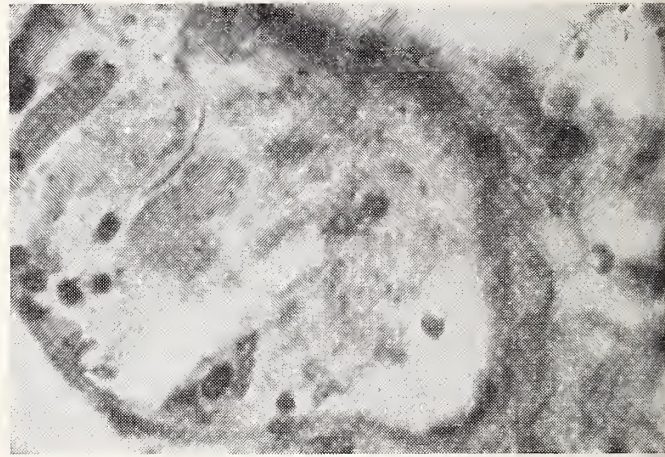


Fig. 5. Particulate matter in dilated pulmonary arteriole. Thin pointed structure may represent lanugo.

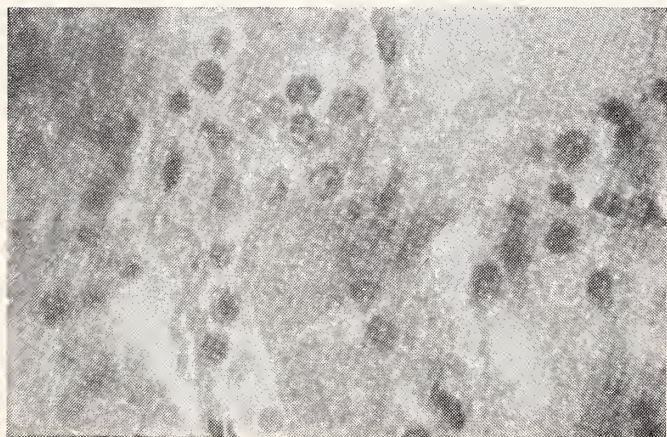


Fig. 3. Dilated capillary containing amorphous eosinophilic material with fat vacuoles.

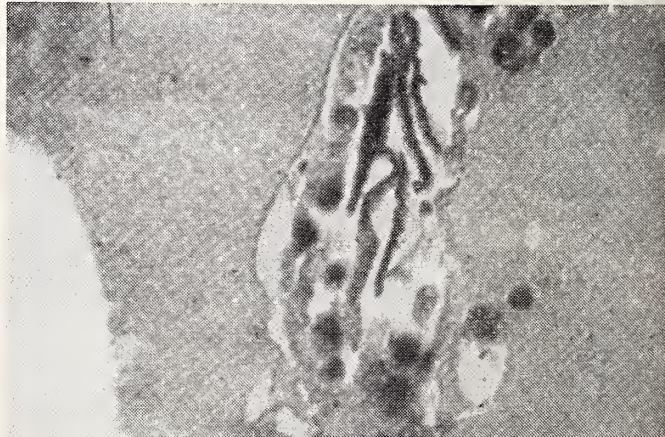


Fig. 6. Dilated capillary containing squamae.

uterus disclosed degeneration of smooth muscle associated with hemorrhage. The laceration was superficial. Amniotic elements were not found in the uterine sinuses.

The microscopic picture in the lungs was quite similar to the material seen in the cases described and illustrated by Steiner et al., J. A. M. A., 1941.

An autopsy was performed on the stillborn infant. Except for congestion of the tissue no other significant abnormality was noted.

Gross and Benz¹¹ demonstrated a flocculent layer above the leukocytic layer in centrifuged blood from the right side of heart or inferior vena cava. Sections or smears of the flocculent layer disclosed meconium and amniotic elements. These authors state that obstetrical fatalities suggesting the possibility of amniotic embolization could be definitely diagnosed by aspiration of blood from the right heart if permission for autopsy was not obtained.

DISCUSSION

A consideration of this reported case of pulmonary amniotic fluid embolism shows an identity of pathological findings in the lungs with other reported cases, but a slight variation in the post mortem uterine lesions and in the local genital clinical signs and symptoms. No evidence of abruptio placentae, placenta praevia, accreta, deep cervical tear or placental tear was present; but, for some unaccountable reason, a large tear in the uterine endometrium was found, also a thinning of the cervical wall with softening of the musculature due to infiltration of blood. This was the evident portal of entry for the amniotic fluid into the maternal circulation.

The constitutional reaction shows the cardinal symptoms of anaphylactoid shock, cyanosis, dyspnoea (hyperpnoea), and vascular collapse. The type of shock was definitely anaphylactoid with warm dry skin. No chill, sweating or clammy skin accompanied the shock phase. The initiating generalized convulsion is a point of variance with other reported cases and requires an explanation. As was mentioned in the case history, the lumbar puncture was negative and pathologically the central nervous system was also negative. Was the convulsion on the basis of deep asphyxiation from massive embolization, as evidenced by the early appearance of hemorrhage and defibrination?

If so, why did this patient return to a nearly conscious state for some thirty minutes prior to the delivery of the fetus and show reaction from the shock phase so as to exhibit a radial pulse that could be accurately counted as well as a blood pressure that was recordable? The bleeding from the mouth was of pulmonary origin as there were no lacerations of tongue, cheeks or lips.

It could not be said that the amount of blood loss of itself could cause death and since in contradistinction to most cases reported in the literature, the patient rallied to a considerable extent from the initial shock, recovery might have occurred were it not for the apparently complete defibrination. Hence, as Steiner and Lushbaugh⁸ have pointed out, recovery may take place from one of the three potent factors, but the simultaneous or rapid subsequence of the triad of anaphylactoid shock, hemorrhage and pulmonary edema is lethal, at least in the present state of our knowledge. It has been shown that in the presence of afibrinogenemia, even massive transfusion (short of exsanguination and replacement) will be of no appreciable benefit unless fibrinogen is available.

DIAGNOSIS

From that which has been set down above it is fairly obvious that no definite diagnostic means are available prior to the onset of shock. True, the pre partum appearance of ecchymoses or purpuric spots may raise the suspicion of blood coagulation defect, but the rapid appearance and disappearance of fibrinolysins, and the equally rapid changes in the quantity of circulating fibrinogen render exact pre partum diagnosis impossible. Clotless bleeding during labor, especially in the presence of placenta praevia or abruptio placentae should call for an immediate examination of the parturient's blood for signs of the imminence of this most distressing accident. All the more urgent is it that this be done for those patients who lapse into sudden deep shock from whatever cause, known or unknown. And lastly all women suffering fetal death in utero or having rising titers of anti Rh agglutinins should be checked periodically.

TREATMENT

Since no primary distinction in vivo can be made between those experiencing intravascular fibrin, clotting mechanisms and those having amniotic fluid embolization, the treatment of these conditions is essentially alike and concerns itself with (a) measures to overcome shock, (b) measures to control hemorrhagic manifestations based on the degree of afibrinogenemia, (c) the combatting of pulmonary edema and (d) an alertness to the reality of the condition combined with a speed and promptness of diagnosis together with the aid of a fully coöperating laboratory, blood bank, donor list (for fresh blood) and available fibrinogen. The execution of these treatment indications is self-evident from what has been said already. However, it must be emphasized that unwise use of too large volumes of fluid may induce pulmonary edema or aggravate edema which is existent.

SUMMARY

A case of amniotic fluid embolization accompanied by severe hemorrhagic manifestations and complete defibrination has been described.

Certain variations in the symptom complex and pathologic findings in the genital tract have been pointed out.

In the discussion allusion has been made to a sufficiently fair sampling of the literature so that a comprehensive picture of this syndrome as a distinct clinical entity may be apprehended.

The prime consideration to be borne in mind in an emergency of this type, with reference to treatment, is the restoration to normal, with all possible speed, of the coagulation defect.

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X-RAY DIAGNOSIS OF PLACENTA PRAEVIA

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The clinical indications for suspecting placenta praevia are well known and it is not the purpose of the authors to discuss them here. But in addition to the clinical indications for suspecting placenta praevia, this condition should be seriously considered whenever in the X-ray examination of a fetus late in pregnancy and presenting by the vertex the following features are noted: 1) the fetal head is not in the sagittal plane i.e. is not in the midline in the a.p. projection, 2) over-rides the symphysis, or 3) is not dipping into the true pelvis.

There are two general methods of X-ray diagnosis of placenta praevia: the direct or "soft tissue" method and the indirect using contrast media in the bladder. In the former, an attempt is made to localize the placenta in the anterior-posterior and lateral films of the abdomen as a space-filling mass of water or muscle density between the uterine wall, delineated by the peritoneal fat or feces and the fetus. If the

placenta is situated on either lateral uterine wall, it is usually readily identified in the anterior-posterior projection. In the lateral projection, it is usually best to follow the different layers of the anterior abdominal wall from the symphysis pubis and by their difference in tissue density from radiolucent fat to relatively opaque muscle to identify them. From without inward there will be seen (1) slightly opaque skin, (2) radiolucent subcutaneous tissues, (3) relatively opaque anterior abdominal musculature, (4) radiolucent peritoneal fat, (5) relatively opaque uterine musculature, and finally (6) radiolucent fetal subcutaneous fat over the fetal skeleton. (Fig. 1.) If the latter two ("5" and "6") are only slightly separated, no mass such as a placenta could possibly intervene, but if fairly markedly separated with interdigitation of the fetal small parts on its inner border, this can be interpreted as placenta.

In the greatest majority of cases, the placenta can

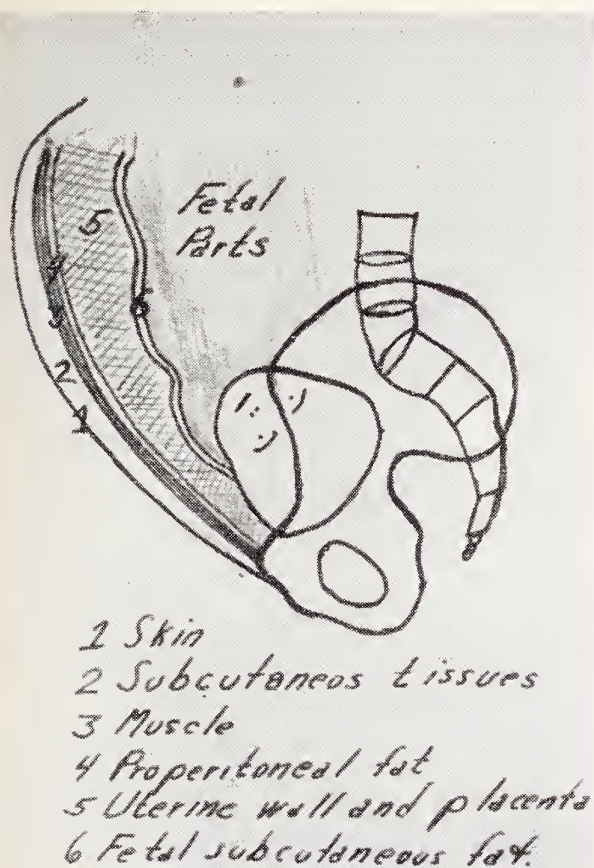


Fig. 1. Normal lateral projection. Direct method.

be localized by this "direct" method. If the films are of good quality and the erect position is used, localization is possible in at least ninety per cent of the cases. The placenta is seen implanted on the flat surface of the anterior or posterior wall (rarely on the lateral wall) up to or over the fundus. The fetus usually has its ventral surface towards the placenta, and the fetal small parts indent the latter. Three diagnoses are possible by this "direct method":

- (1) Placenta in upper segment of the uterus.
- (2) Low implantation of the placenta, without encroachment on os ruled out by this method.
- (3) Placenta not seen.

This localization of the placenta should be attempted in all X-rays taken for pelvic measurements or fetal position. Some of the cases that fall into group "2" above all of those in group "3" should be suspected of "placenta praevia" and if clinically indicated also should be subjected to the "indirect" method of examination.

In the "indirect" method either sodium iodide or air (40 c.c.) is injected into the maternal bladder. The former medium is preferred by the authors to eliminate the danger of air embolism and provide better contrast. In the normal cases without placenta praevia, the sodium iodide-filled bladder is separated



Fig. 2. Normal. Not more than 5 mm. separation of dye-filled bladder and fetal skull. No placenta praevia.

from the fetal skull by five (5) mm. of interposed soft tissue consisting of fetal scalp, thinned uterine wall, and bladder wall. (Fig. 2.) Any interposition of placenta will appreciably widen this shadow allowing the diagnosis of "placenta praevia" to be made. (Fig. 3.) In this method, it has been noted by the authors that although the placenta may not be interposed, it may indent the bladder shadow with the production of a "niche" of the superior margin, so that the diagnosis of "low implantation without placenta praevia" may be made. (Fig. 4.)

The disadvantage of this method is that the fetus must present by the head (vertex) and the head must dip into the true pelvis. Any condition such as the umbilical cord around the fetal neck preventing descent will confuse the picture. The accuracy of this method in confirming or disproving the presence of placenta praevia is stated to be ninety-seven per cent, although it does not necessarily localize the placenta, if it is not abnormally implanted. In central placenta praevia and in low implantation with praevia, we have found this method to be one hundred per cent in forty-eight cases. All errors in diagnosis can be expected in determining whether a low implanted placenta encroaches upon the os, and without the in-

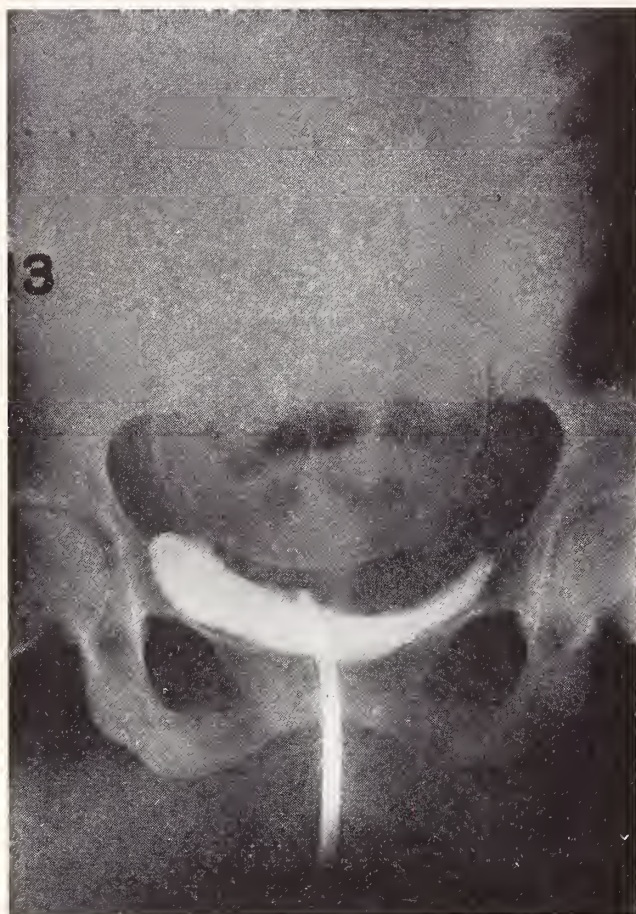


Fig. 3. Greater than 5 mm. separation of dye-filled bladder and fetal skull. Placenta praevia.



Fig. 4. (Retouched.) Niche on anterior and upper margin of dye-filled bladder without more than 5 mm. between bladder and skull. Low implantation of placenta without praevia.

direct method, we do not believe that encroachment can be eliminated.

All cases of vertex presentation suspected of placenta praevia are examined by us, using the "indirect" method as outlined above. Thus, we are able to rule out or confirm the diagnosis of "placenta praevia" or any significant low implantation. Otherwise, the site of the placenta appears to be of no more

than academic interest. If the fetus does not present by the vertex, the direct (soft tissue) method is the one of choice.

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Rapid strides have been made in the development of emergency medical call plans with 364 services in existence throughout the nation at the end of 1951, AMA's Council on Medical Service has just reported.

Outcome of '52 elections may depend on size of stay-at home vote, says Poll-Taker Gallup . . . Doctor who stays home this year is a slacker . . . Get ready to vote.

In December, 1950, the Council on Medical Service listed 34 constituent medical associations as having grievance committees. A little more than a year later the number of grievance committees has increased to 42, including committees in the District of Columbia and Hawaii. — AMA Council on Medical Service Progress Report on Medical Society Grievance Committees, January, 1952.

PERFORATION OF GASTRIC REMNANT NINETEEN MONTHS AFTER GASTRECTOMY

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There exists considerable disagreement relative to the effectiveness of gastric resection for duodenal ulcer. One of the most important reasons for disagreement is found in the many striking discrepancies observed, when attempts are made to define the criteria which must be met, in order for a resection to be adequate. It has become increasingly clear, however, that more favorable results are being achieved since the technic of gastric resection has become more precisely standardized and certain other requirements are more rigidly enforced.

It has been demonstrated that the best results with partial gastrectomy can be obtained only if 75% or more of the stomach is excised, including the greater portion of the lesser curvature and all the pyloric antrum. If a duodenal ulcer is so situated as to warrant division of the stomach just proximal to the pylorus, all the mucosa nevertheless must be excised.

With the re-establishment of the continuity of the gastrointestinal tract after resection, a short afferent loop of jejunum must be used to avert the danger of future anastomotic ulceration. In pointing out the need for additional safeguards, Wangenstein¹ emphasized the importance of utilizing a short afferent loop in the anastomosis. This, he said, facilitates the formation of secretin and, therefore, the production of alkaline pancreatic juice, an extremely effective agent in guarding the stoma against proteolysis.

When operative criteria such as those just mentioned are observed, the late results of partial gastrectomy for duodenal ulcer are encouraging. Allen and Welch² found that 87 percent of 1,290 patients obtained excellent or good results, 6 percent were benefited and 7 percent were unimproved. Wangenstein's¹ experience (231 cases of partial gastrectomy for duodenal ulcer), as reported by Gavisser,³ was likewise highly successful: an excellent or good outcome in approximately 82 percent of patients and a satisfactory one in 15 percent. These results are very similar to those of Walters and his associates,⁴ who, in studying 197 patients, observed that 83.5 percent were well without any limitations, and 14 percent were well on dietary restrictions. Miller's⁵ results were even more notable: 90 percent of 230 patients were considered cured, and 10 percent benefited.

It has been shown that adequate gastric resection reduces to a relatively low figure of 3 to 4 percent, the incidence of recurrent ulcer disease. It produces relatively minor digestive symptoms, mostly apparent for a short time immediately after operation, which are due to the relatively smaller gastric reservoir.

Milstein⁶ in reviewing the late results of partial gastrectomy in 101 patients found that the level of hydrochloric acid one month after operation is usually nil in most cases with adequate resection. Some of these patients were found to have free hydrochloric acid later, and so the early figure must be considered a temporary effect of disturbance of the vascular or nervous supply. Similarly, postprandial hypoglycemic manifestations are said to diminish or disappear with time, so that a recent examination of a series of cases will show a higher incidence than a series operated on some years ago. It could well be that the recurrence of large amounts of free hydrochloric acid is intimately related to the late recurrences which occur following partial gastrectomy. In Milstein's⁶ series achlorhydria persisted in 68.2 percent of the cases after a period of 12 months. Since the physiological basis of the operation of partial gastrectomy is the removal of the acid-secreting area in order to achieve achlorhydria, it must be considered to have failed in over 30 percent of the cases. However, the results in this series suggest that a successful clinical result, with complete relief of symptoms, can occur in the presence of a final high level of free hydrochloric acid, since only 3.4 percent in this series were considered as not to have an excellent final result. Apparently, the alteration in gastric physiology produced by the operation is clearly more complex than a simple reduction of the acid-secreting power. This does not detract from its value as a procedure for treating chronic ulcer, because it does result in relief of symptoms. Admittedly, only cases with free hydrochloric acid will develop anastomotic ulcers.

In reviewing the literature on late post-gastrectomy results, one is impressed with the minimal number of recurrent ulcerations which occur, and especially with the fact that an ulceration occurring in the gastric remnant is almost never encountered. Why recurrence should occur in the gastrojejunal stoma occasionally, and not in the gastric remnant, is difficult to say; it would seem as though the gastric remnant is bathed in as much free hydrochloric acid solution as the stoma, and should be just as vulnerable; for some unexplainable reason, however, this does not seem to occur.

The following case report is unusual in that the patient had undergone an adequate subtotal gastrectomy for duodenal ulcer, and 19 months following operation developed a perforated ulcer in the gastric remnant.

CASE REPORT

The patient is a 32-year-old white male who was first admitted to the hospital on March 23, 1949, with a chief complaint of severe epigastric pain; he had some nausea but no vomiting. The onset of his present illness dated back to 10 days prior to admission and the symptoms had become progressively worse since the onset. He stated that his first episode of epigastric pain and distress occurred in 1944, at which time he was X-rayed, found to have a duodenal ulcer, and placed on a dietary regime. His symptoms cleared fairly well after 3 or 4 weeks.

On admission to the hospital the general physical examination was normal except for some tenderness and spasm in the epigastric region. A gall bladder series taken 3 days after admission was normal. A gastrointestinal series taken 6 days after admission showed an active ulcer just beyond the duodenal cap. There was no 6 hour gastric retention and no evidence of duodenal obstruction. Unfortunately, at that time, no gastric analysis was performed. He was placed on a dietary regime, antacids, and antispasmodics, and responded well to the therapy and was discharged from the hospital 10 days after admission.

His second admission to the hospital was on December 12, 1949, approximately 9 months after the original admission. He again complained of a sharp, continuous pain in his "stomach," and upper abdomen, which radiated to the back. He stated that he had remained on his diet, and had faithfully taken his medicine since the time of his admission 9 months previously. During that interval of time he was never completely free from epigastric distress or pain, and he felt that the treatment did very little to relieve his symptoms. On the day following admission he again had a gastrointestinal series. At this time the ulceration beyond the cap was considerably larger, and there appeared to be more obstruction. A fluid level also appeared in the ulcer, which was suggestive of chronic perforation; again, unfortunately, a gastric analysis was not performed. On December 19, 1949, 7 days after this admission, he was operated upon, and a subtotal gastrectomy was performed. He had an uneventful convalescence and was discharged from the hospital 10 days after operation.

My first contact with this patient was on July 15, 1951, when he was re-admitted to the hospital as an acute emergency. He stated that 2 hours before admission he experienced sudden, severe, epigastric pain, which soon radiated over the entire abdomen. Shortly thereafter, the pain radiated to his left shoulder, he became nauseated and the pain became progressively more severe; he was sent to the hospital immediately by his family physician and was seen in consultation. His temperature was 99°; pulse 90, blood pressure 140/100. Physical examination revealed a tense, boardlike rigidity of the entire abdo-

men, with marked rigidity and spasm everywhere. There was marked tenderness over the entire abdomen, and peristalsis of the abdomen was absent. He was immediately X-rayed, and upright films of the chest showed free air in the abdomen and fluid levels below the left diaphragm. His white blood count was 18,200, with 84% polys; 14% lymphs; and 2% basophiles. The urinalysis was essentially negative. A tentative diagnosis of perforated intraabdominal viscus was made, probably perforation of a gastrojejunal ulcer, and he was prepared for surgery. At operation there was found a perforation on the lesser curvature on the anterior aspect of the gastric remnant. The gastroenterostomy stoma was patent, soft, and there was no evidence of ulcer at the gastrojejunal stoma. The perforation in the gastric remnant measured about 1 centimeter in diameter, and the abdominal cavity contained a large amount of gastric contents free in the peritoneal cavity. A careful examination was made of the gastric remnant and it was found that a resection was adequate, and that about 75 percent of the stomach had been resected. He had an uneventful postoperative course, except for some minimal atelectasis which occurred on the second postoperative day, but this soon cleared. On July 23, 1951, 8 days after operation, a gastric analysis was done and showed the following:

	Specimens			
	1.	2.	3.	4.
Total HCL	11.2	44.0	44.0	27.0
Free HCL	.0	56.6	32.0	20.0

It will be seen from the above findings that this patient had a marked return of free hydrochloric acid 18 months after an adequate gastric resection. Later questioning revealed that he had had gastric symptoms with epigastric distress and occasional nausea for about 6 months before the acute perforation.

In reviewing the literature for the past 10 years one is unable to find any reported cases of perforation occurring in the gastric remnant following adequate gastrectomy; there was one report in the French literature by Peycelou⁷ in 1948, which gave a resume of 7 perforations in the gastric remnant, but, unfortunately, I was unable to obtain this paper. Apparently this is a rare occurrence, and we felt that it was worth-while reporting.

SUMMARY

1. The results of subtotal gastric resection for duodenal ulcer have been evaluated.
2. The late complications of gastric resection have been enumerated, and the theoretical reasons for the occurrence of these complications seen.

Continued on page 115

CHRONIC ALCOHOLISM — A MEDICAL PROBLEM

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In 1949, a legislative act created the Liquor Research Commission in an effort to determine the need for, and feasibility of state action to deal with unwelcome conditions arising from the sale and use of alcoholic beverages in Maine. After exhaustive study this Commission reported to Governor Payne and the members of the 95th Maine State Legislature on January 31, 1951. A look at some of the figures in this report can leave no doubt in anyone's mind that Maine has a definite alcohol problem. It is estimated that approximately 400,000 of our citizens use alcoholic beverages to some extent. Of these, 25,000 were classified as excessive drinkers. By this was meant those people who could control their conduct under suitable stimulus or treatment but still use alcohol to the point of doing themselves bodily harm. Of this number 20%, or 5,000, are classed as chronic alcoholics. These figures alone are particularly alarming, but when it is considered that the consumption of absolute alcohol in Maine has increased over 60% in the past ten years it would seem safe to conclude that that number is on the increase.

Since the medical profession has started to consider alcoholism as a disease rather than a situation to be dealt with only by a "hands off" policy, the basic pathology of alcoholism has been considered to be psychological. We are all familiar with the alcoholic who uses his drinking merely as a means of escaping reality, as well as the individual who deludes himself into believing that he is using alcohol to help give him the needed energy to perform his daily tasks. Within the past few years the entire field of endocrinology has been more thoroughly investigated and many conditions are now being looked up on as primarily endocrine in nature. The fact that the clinical picture of chronic alcoholism is very much like that of hypoadrenalism has led many researchers to pursue this opening. We are told that many chronic alcoholics first had abnormal craving for carbohydrates as younger individuals and went on frequent chocolate, or other candy, binges. This craving for carbohydrates is said to be the result of lowered adrenal cortex activity and the situation leads to a spiraling effect as ingestion of large amounts of carbohydrates merely makes the hypoadrenalism more severe. When the ingestion of carbohydrate fails to satisfy this abnormal craving, the individual finds that alcohol will temporarily solve the difficulty. It leads to a much more serious situation, that of a craving for alcohol. This theory does seem to have some merit because it has been found that the use of adrenal cortical extract administered to a patient during a spell of crav-

ing for alcohol will eliminate the craving and, in many instances, prevent an alcoholic binge. An additional piece of evidence in favor of this theory is the fact that during alcoholic debauches the patient usually exhibits a relative lymphocytosis and eosinophilia which is common to the hypoadrenal state, and is reversed by the administration of adrenal cortical extract.

The role of the gonads in the production of alcoholism is a questionable one, but does seem to most observers to play a definite and important role. Many patients become alcoholics at or near the time of the menopause, both in the male and in the female. Some patients are definitely helped by the use of the sex hormones in combating alcoholism at this age.

The treatment of a patient, in the throes of an acute alcoholic episode should be directed to many aspects of the illness. The correction of dehydration is of prime importance and especially in a patient who has been vomiting. The use of excessively hypertonic solutions of glucose should be avoided. Five (5%) glucose in normal saline is perhaps the best intravenous fluid in the initial stage of treatment. If more than 1000 c.c. of fluid are necessary during the first twenty-four hours, the remainder of the fluid should be given in the form of normal saline. The sedative par excellence in the alcoholic patient is paraldehyde but this drug is not without danger. Many patients are seen who, following the use of paraldehyde for sedation, develop a craving for the drug and go on paraldehyde binges. The continuation of sedation is also a situation to be avoided. After the first forty-eight hours, no more sedative should be administered for fear of substituting an addiction to the sedative for the already present addiction to alcohol. Adjunct drugs such as Tolserol and intravenous Benadryl are highly recommended for their help in reducing the excitability of the patient and relieving the anorexia. Vitamins should be administered in therapeutic quantities, but the excessive use of large doses of vitamins is merely wasteful unless the patient has one of the neurological complications which are so frequently seen in the chronic alcoholic state.

Whole adrenal-cortical extract is perhaps the best hormone preparation for use in treating the acutely inebriated patient. Many men feel that the use of aqueous adrenal-cortical extract is better than the use of lipo-adrenal extract which has been recommended by others. Ten (10 c.c.) of aqueous adrenal-cortical extract should be administered three times a day during the first twenty-four hours; twice a day

during the second twenty-four hours; and once daily for at least a week. The sex hormones should be used in the long-term care of the alcoholic patient. Twenty-five (25 mgm.) of testosterone three times a week for two weeks, followed by two doses weekly for the next two weeks, and then once a month thereafter is recommended in male patients over forty years of age.

Perhaps the most important single factor in the treatment of the acutely inebriated patient is a thorough follow-up. Merely relieving the patient's nausea and vomiting and acute tremulousness is not adequate treatment. Long continued psychotherapy is of utmost importance in preventing relapse. This psychotherapy can, in most cases, be best administered by the patient's own physician and need not require the services of a psychiatrist. Most patients resent being referred to a psychiatrist and the majority of the patients who are referred fail to keep their appointments. Many a patient has been saved from a serious slip by knowing that he can feel free to call upon his family physician whenever he begins to experience the craving for alcohol. At these times it is sufficient to sit down and talk with the patient and let him rid himself of some of his anxiety and give voice to his frustration! The judicious use of a single dose of adrenal-cortical extract at these times can successfully eliminate the craving for alcohol.

It is my belief that every patient who has the diagnosis of chronic alcoholism established should be referred to Alcoholics Anonymous. This group of lay individuals has done more towards solving the alcoholic problem than any other single group. The group psychotherapy which takes place at their meetings

keeps many men on the path of sobriety. If all these measures of psychotherapy fail, one of the forms of conditioned reflex type of treatment may be instituted. Of these, the use of Antabuse is perhaps in greatest favor today. Antabuse, however, is not without danger and should be given only by a physician who is thoroughly familiar with the pharmacology of the drug and the side reactions to be expected. This therapy should never be instituted without first ascertaining that the patient is in good general health and has normal liver function. It should never be instituted without the patient having full knowledge that he is receiving Antabuse therapy and the dangers connected with the intake of alcohol while on this treatment.

If the average alcoholic is left to his own devices he will sink to a low level of degradation from which recovery is practically hopeless. Not only is he subject to the many physical complications of the illness, such as gastro-intestinal and nervous system deterioration, but also to a mental deterioration, from which state return is impossible.

Only if we are willing to treat these victims of chronic alcoholism as we would the victims of any other debilitating disease can we make strides in the rehabilitation of the patient. A look around us at the many respected and useful citizens who today are carrying on normal activity but, who yesterday were victims of this dread disease, will convince us that every effort should be made in fighting the disease which numerically cripples far more people than polio, multiple sclerosis or a host of other allied conditions on which millions of dollars are being spent for research.

LYMPHOSARCOMA OF THE URINARY BLADDER*

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Lymphosarcoma of the urinary bladder is an exceedingly rare disease. This case is the eleventh to be reported as far as can be determined. Higgins reported a case in 1949. He reviewed the literature at that time and showed that the first two cases were reported in 1885. The fifth case was reported by Kreutzmann in 1942, followed by Rathbun and Wehrbein in 1944. Burros et al. reported a case in 1950 and found two additional cases in the literature, one by Levant and Rosenfield, the other by Maloney.

CASE REPORT

A white male of 47 was admitted to the Mercy Hospital July 9, 1948. His chief complaints were weak-

ness and dizzy spells. He also had noted tarry stools. He had been losing weight. He minimized any urinary symptoms but he finally stated that he had noted blood in his urine eight months before. His urine continued to be quite dark, almost coffee colored at times. He had slight frequency and nocturia. For two or three months before hospitalization he also had free bleeding from his upper gums.

Examination showed a slight, very anemic male, weak but in no pain. There was a large mass in the abdomen suprapubically which was very firm, somewhat to the left of the midline and extending almost to the umbilicus. On rectal examination the mass was very extensive and fixed.

The red blood count was 2,300,000, hemoglobin 41%. The urine showed numerous red blood cells.

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After several blood transfusions an intravenous pyelogram showed good dye excretion with no evidence of ureteral obstruction. The bladder was displaced to the right by a large tumor mass.

Cystoscopic examination showed a large smooth mass occupying the entire left side of the bladder including the vesical neck. Biopsies were obtained and it was the impression that the mass was a sarcoma of the bladder. Because of its fixed position it was felt to be inoperable.

The patient continued to be anemic and the red blood count went down to 1,580,000 with auto-agglutinins present.

August 3, 1948, exploration was done in order to determine the feasibility of partial cystectomy. It was found, however, that the tumor was entirely too extensive even for conservative surgery. A large section was taken for further examination. A suprapubic catheter was left in place and later the bladder was allowed to close.

The pathology report by Joseph E. Porter, M. D., of the Maine General Hospital showed the specimen to consist of two pieces of tissue measuring 2 x 2 x 1 cm. They had a hemorrhagic granular appearance. Microscopically in these sections there was smooth muscle throughout in which there were numerous uniform small cells having a scanty amount of cytoplasm. The cells were characterized by the presence of a circular hyperchromatic nucleus. They were compactly arranged and formed large masses scattered throughout the smooth muscle and also appar-

ently to some of the adjacent fibrous tissue stroma. Mitotic figures were not common. Impression: Lymphosarcoma.

The patient was given a course of deep X-ray therapy. He responded very well and was later able to return to work.

In August of 1949 there was a little increase in size of the mass suprapubically and another course of X-ray therapy was given. This brought the mass down again and he continued well until October of 1950.

About this time he became weaker, more debilitated, and died on December 23, 1950.

CONCLUSION

Lymphosarcoma of the urinary bladder is an exceedingly rare malignant tumor.

The eleventh case of this type of tumor is reported. This tumor was inoperable. It was necessary to resort to radiation alone.

Surgical excision, if possible, followed by post-operative radiation is the treatment of choice for lymphosarcoma of the bladder.

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Perforation of Gastric Remnant Nineteen Months After Gastrectomy—Continued from page 112

3. A case report has been given in which a perforation occurred in the gastric remnant approximately 19 months following an adequate gastric resection.

4. It was demonstrated in this patient that there was a marked recurrence of free hydrochloric acid present after 19 months.

CYSTS AND DEGENERATIVE CHANGES IN THE MENISCI OF THE KNEE JOINT

LEO J. McDERMOTT, M. D.*

The variances of opinion in the literature as to the pathogenesis and histologic pathology have prompted this study of an interesting and important, if somewhat unusual, group of diseases of the knee joint.

It has been our feeling that the term menisci is a preferable name to the more commonly used terminology, semilunar cartilages. Reasons for this preference will be given later.

Material: There has been available for study a group of 50 menisci. Some of these had been removed because of clinically diagnosed cysts, while others were so treated because of ruptures of the structures. In addition another group of menisci and knee joints were removed at post-mortem examination from patients of various ages in whom no evidence of disease of the knee joint was suggested by history or physical examination. A third source of material, used in part for this study, was a collection of human embryos, the knee joints of which were studied microscopically in serial section.

Anatomic Considerations: The gross anatomic features of the joint are quite generally appreciated, but there are a few of them which, in addition to certain histological features, shall be reviewed at this time for emphasis because of their direct bearing on points to be discussed later.

The attachments of medial or internal meniscus with its short coronary ligament are such that it is much less freely movable than the external or lateral meniscus. Accordingly it would appear that the former is rendered more liable to trauma by being crushed between the articular surfaces of the femur and tibia in as much as there is less chance of it being pushed out from contact during flexion and rotation when crushing forces are more liable to act. Bristow (1925) has described the length of the respective coronary ligaments as 6 mm. for the internal and 10 mm. for the external. Also both menisci are so attached at their anterior and posterior ends that their midportions would appear to be the most freely movable parts. Our dissections of knee joints up to 12 years of age lead us to be convinced of these points.

There is considerable difference of opinion as to the relation of the synovial membrane to the menisci. We have been able to demonstrate that there is a gradually changing relationship from the picture at birth to that found in early childhood, adolescence and adult life. At birth the menisci are covered by a well developed synovial membrane except on those

aspects of attachment to the coronary ligaments and the joint capsule. During the first year of life this condition prevails. However, after this time, over the course of the following year or two there is a gradual disappearance of a synovial covering except over those thicker portions of menisci where they are less exposed to pressure and are vascular. From these areas the synovia is continued over the internal portions of the capsule and joint cavity. The border line between the vascular and avascular portions of the menisci is well marked by the rather abrupt loss of synovial covering of the latter. Throughout the remainder of childhood and into adult life there appears to be no further change in distribution of the synovial lining of the joint with relation to the menisci. It might be well to mention at this time that during the embryologic development of the knee joint the menisci are completely formed several weeks before there is any suggestion of appearance of synovial membrane lining any portion of the cavity or covering any of the interarticular articular structures.

The histologic appearance of normal menisci at birth shows that they are composed of dense collagenous bundles running in various directions. No cartilage cells or matrix are to be found. This condition appears to be present well into adult life. It has been our experience to find no evidences of cartilage in the normal menisci up to the age of 12 years. Also those of the older age group up to 35 years show only a few rather indefinite islands of cartilage irregularly distributed through the dense fibrous mass. The menisci of this group, however, were not normal. Burman and Sutro state that the menisci do not assume the characteristics of cartilage until the age of 15 years. It is because of these observations that we would prefer to use the term menisci to semilunar cartilages.

Literature: It might be well at this point to digress for a moment in order to define several terms which will be used frequently henceforth. There is a great deal of disagreement in the literature and textbooks of histology as to their scope, and definite statements of their meaning and application in the subsequent discussion will avoid the confusion which has arisen in the past by reason of their use without agreement of meaning.

Bremer, Cowdry and Maximow (Bloom) feel that the term "endothelium" should be applied only to the layer of flattened cells derived from the mesoderm which line the blood and lymphatic vessels. Mesothelium according to these authors should serve to design-

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nate the layer lining the pleural, pericardial and peritoneal cavities which are subdivisions of the main body cavity. Neither of the above terms should be used to describe the synovial lining of articular cavities. Bremer feels that it is correct to designate mesenchymal epithelium to apply to the lining membrane of joint cavities. However, Maximow (Bloom) states that it should be used in connection with the lining of the subdural and subarachnoid spaces, perilymphatic spaces of the ear and intraocular chamber. The latter feels that since synovia is derived by alteration of outline and position of mature fibroblasts this joint lining should not be included under the term mesenchymal epithelium. We shall employ the above mentioned terms in the sense used by Bremer and Cowdry.

Ebner is credited with the first description of a cyst of the menisci in 1904. Since this time a large number of publications on the subject have expressed many theories of their etiology and numerous interpretations of the pathologic minutiae.

Bennett and Shaw in 1936 gave an excellent review of the literature and summarized the data on 163 cases which had been reported at that time. Of these 151 were found in the external meniscus and 12 in the internal meniscus. They state that Allison and O'Connor, Nutter and Blew, Orr and Heggie, Pyle, Silfverskiöld, Mandl, are of the opinion that cysts are produced by trauma followed by hemorrhage into the injured portion of the meniscus, mucoid degeneration of the hematoma and formation of a pseudomesothelial cyst wall by compression of the area of fibrocartilage surrounding the degenerated portion. In the publication of these authors we are unable to find any reference to hematoma formation as a stage in production of meniscal cysts. They attribute to Foliasson, Heusser, Jean, Kroiss, Krapf, Sorrel, Jastrun, Pelizaeus, as well as Nové Josserand, the above mentioned theory. Bennet and Shaw are of the opinion that repeated minor traumata with summation of damage to the exposed areas of the menisci are the factors which are responsible for the production of the cysts and agree with Taylor, who feels that these traumatic insults are followed by exudation of fluid into the meniscus with degenerative changes following as a result of increased pressure within. A vicious cycle is thus started and continued. Bristow comes to the conclusion that the cysts are comparable to ganglia. Degeneration is seen in the meniscus, the synovia, and extrasynovial adipose and areolar tissue as well. He doubts the importance of trauma in the production of the degenerative changes. Fisher also expresses the opinion that they are the result of mucoid degeneration of the connective tissue at the outer border of the meniscus and may or may not extend into the substance of the meniscus. He feels they are the same as ganglia. Kerr, whose opinion is

incorporated in the paper of Orr and Heggie, describes a myxomatous degeneration with edema within the meniscus and says that trauma is an important factor. Orr and Heggie accept the view of Fisher and liken the cysts to ganglia of tendon sheaths. They feel that interference with the blood supply is a contributory, rather than a primary etiological factor in the production of the cysts. Phemister postulates a wear and tear trauma, followed by mucoid degeneration of the meniscus with cyst formation. He too states they are identical with ganglia. Trauma followed by gradual degenerative changes is the opinion of McMurray and Colonna, as well as Symmers who presents the pathologic features contained in the latter's paper. Roellgen suggests repeated traumata followed by degeneration while trauma, vascular changes and degeneration is the sequence mentioned by Burman and Sutro. Roellgen also suggests that changes in the synovial fluid as well as changes of vessel walls play a role in the development of meniscal diseases. Ishido expresses a like opinion. Trauma followed by interference with blood supply of the meniscus is stated by Allison and O'Connor as well as by Nutter and Blew and their pathologist, Conner. However, these authors do not mention the nature of this vascular disturbance. Wolbach, who studied the pathologic features of the cysts reported by Allison and O'Connor, states that the small arteries and veins are normal. Elmslie insists that the cysts are primarily in the synovial membrane and intimates that they extend directly into the substance of the meniscus from this source. Pyle, through his pathologist Collins, mentions degeneration of areas within the meniscus with replacement of these areas by fluid and eventual organization by fibroblasts. He raises a question as to the presence of a low grade inflammatory reaction. His theory would seem to suggest a spontaneous healing of the cysts. Ledderhose has described obliterative changes in the parameniscal arterioles as the factors responsible for cystic formation within the menisci. Activity of cells secreting a gelatinous fluid has been offered by King as the mechanism of cyst production. He, however, goes no further to explain the type of cell capable of such activity nor does he suggest factors which may be responsible for it. The idea that the cysts may be congenital in origin has several proponents. Ollershaw holds this theory and feels that the cysts are inclusions of synovia within the meniscus which are related to trauma in some way; probably the latter stimulates the synovial lining to secrete because of irritation. This theory appears to be based in part on his idea that the menisci are developed in the synovial membrane. Majer subscribes to the presence of trauma in addition to a congenital factor. Zadek and Jaffe also sponsor the congenital inclusion of synovia with trauma playing a secondary role leading to fill-

ing of the cysts with secretion. Geschickter and Lewis state they appear as a result of regressive mucoid changes in precartilaginous tissue but also feel that the cysts developing at the point of junction of the perichondrium suggest synovial inclusion. However, in spite of the above afterthought they seem to hold the opinion that they are akin to cysts seen in synovial membrane and to ganglia developed in tendon sheaths. Campbell and Mitchell in addition to McIntosh, who studied the pathology of their material, interprets cyst formation as the result of the splitting of connective tissue fibers of the meniscus along parallel planes. They do not offer an explanation of the mechanism of such splitting. Progressive degenerative changes of the aging process with cyst formation have been considered by Burman and Sutro as an etiologic possibility. Kleinburg states that a degenerative process, dissimilar to ganglion formation, initiated by a local change of cell metabolism or perhaps by an injury to blood or lymphatic vessels is responsible for production of meniscal cysts.

The presence of degenerative changes in menisci as a part of a picture of degenerative changes in connective tissue throughout the body with increase in years of one's terrestrial span has been described by many authors. Such conception raises interesting possibilities. Degenerative changes of menisci associated with metabolic disturbances have also been described. Israelski has described calcification of menisci sometimes seen in association with a like process in the intervertebral disks. He states the condition has its onset after middle life and is not usually associated with arthritis deformans. Although diabetes and gout seem to have an etiologic bearing in some instances he states that it is likely that a tendency for degeneration or necrosis of fibrocartilage in later life plays an important role. Calcification is always preceded by degenerative changes in the menisci. Weaver has described ossification of internal cartilage following degeneration. Burman, Tobler and Sutro found degenerative changes in a high percentage of menisci removed routinely from cadavers from the 2nd decade and feels that such changes are universal after the 3rd decade. Bircher has described degenerative changes in more than 50% of menisci surgically removed. Degeneration noted by Ishido as accompanying systemic diseases as well as those described by Mandl as associated with diabetes are felt by Burman and Sutro to be manifestations of progressive age. These authors studied microscopically 50 menisci obtained from cadavers and are of the opinion that the degree of degeneration is directly proportional to the amount of arthritis, but admit that severe degenerative changes are found in the absence of arthritis and vice versa, and do not always parallel age.

The role of vascular changes which have been described by some authors in association with meniscal

cysts and degenerative changes in the menisci in the absence of cysts, has caused considerable debate.

Phemister insists that the vascular alterations are a part of the degenerative process and are not of etiologic import. As mentioned previously, Ledderhose has adopted the opposite stand. Burman and Sutro found vascular alterations at all ages as low as 10 years and state they run parallel to the degree of degeneration. Vascular changes were found in all cases of meniscal cysts. Numerous authors make no statement as to the appearance of the blood vessels in their cases, but comment upon changes noted by others. Ebner demonstrated an endarteritis of vessels of the surrounding connective tissue, while Ollershaw and Schmidt found no lesions. As mentioned previously, Wolbach found the blood vessels were normal. Bristow (1928) was unable to see any definite connection of cysts with vascular changes but described endarteritis and a myxomatous degeneration of the vessel wall. Collins in the publication by Pyle reported thickening of vessel walls with hyperplastic endothelium. Thickening of vessels was observed by McIntosh in Campbell and Mitchell. Phemister noted thickening and hyaline degeneration of walls of smaller arteries. Henschen described changes in meniscal vessels associated with diabetes and Mandl has seen evidences of arteriosclerosis in them. Burman and Sutro describe hyalinization of walls of smaller vessels and capillaries of the menisci from cadavers, showing degenerative changes with consequent fibrosis. Thrombosis was unusual but vacuolization was seen in intima and media. Like changes were seen in menisci removed at operation in which degenerative changes were more common than in the menisci from the cadavers. Monkeberg's sclerosis was seen in a meniscal vessel in one instance. They do not definitely assign a direct causal relationship between these vascular phenomena and changes in the menisci.

The presence of infection and inflammation in an etiologic role with relation to production of degenerative lesions and cysts in menisci has been sponsored by some and denied by others. Phemister reports cultures of cyst fluid showed no growth and could find no microscopic evidences of inflammation in his two cases. A like experience with culture has been noted by Campbell and Mitchell but they feel that thickened blood vessels and infiltrating wandering cells seen histologically in the menisci are indicative of chronic inflammation. Collins in Pyle's paper affirms the presence of a low grade inflammatory process. Wolbach states he saw no inflammatory reaction in the cystic menisci other than occasional lymphoid cells and mononuclear phagocytes containing hemosiderin. According to Burman and Sutro, Pouzet, Bonnet, Philipoff, Steinman, Ester, Patel and Judet have described inflammatory changes, but they were unable

to demonstrate such in their own material. Zadek and Jaffe appear somewhat contradictory in their statements on this point. Nutter and Blew vouch for the presence of an inflammatory reaction in the tissue surrounding the cysts. Bennett and Shaw merely make the statement that no active meniscitis is present. (It is to be remembered that the presence of inflammatory changes do not necessarily point to the presence of infection.)

The main point of contention in the literature as regards the cysts of the menisci is the interpretation of the histologic appearance of the wall of the cyst and its lining. Goldheizer, who examined the material of Kleinberg, feels the lining is endothelium probably derived from lymphatic vessels. Synovial endothelium lines the smaller cysts while the larger ones have larger flattened cells, which are possibly fibroblasts, but probably endothelial cells according to Zadek and Jaffe. Bennett and Shaw ascribe a mesothelial-like wall of compressed fibrous tissue cells. Ollerenshaw appears to have been the first to state that the cysts were lined by what he calls synovial endothelium. He insists upon such a lining only in the smaller cysts and now admits that the larger ones present a different appearance. This variation he feels is due to the larger cysts having reached full development and some unknown process which was responsible for their generation has burned itself out. Taylor describes the cyst wall as being a stretched layer of proliferating fibroblasts. Wolbach holds the opinion that the cysts have no specialized lining. They are surrounded by dense fibrous tissue of concentrically arranged cells and intercellular material providing the effect of a laminated wall. The inner surface, he says, has occasional flattened nuclei of cells without demonstrable cytoplasm. Bristow states that the cysts are lined by endothelium as in ganglia, while McMurray as well as Collins interpret the lining as being composed of compressed cartilage cells. Phenister notes a thick, dense, wall of mature connective tissue and newly formed degenerating connective tissue. A lining of fibrous tissue with signs of surrounding inflammatory reaction is noted by the pathologist of Nutter and Blew, Conner. King states there is a modified connective tissue which is the same as synovia and that the cysts are "joint cavities." Burman and Sutro state the meniscal fibers are sometimes so altered as to form a smooth lining, and in the larger cysts the walls are formed of smooth flattened fibers. In some instances a hyalinized lining without cells may be present according to these authors, who also state that Zäch Christen holds the latter view as applying to all the cyst walls. Colonna asserts that the lining is composed of connective tissue cells flattened by pressure, and in this respect is in agreement with Bennett and Shaw. However, the pathologic description by Symmers in Colonna's publication states that

the walls are composed of reticular tissue which has arisen in an effort to wall off the autolyzing cartilage and that the necrotic tissue acts as a foreign body enclosed by connective tissue. Campbell and Mitchell as well as their pathologist McIntosh, note that there is no definite lining of the cystic spaces and in this respect they are in accordance with the view held by Wolbach. However, they assert that the cysts are formed by cleavage of parallel surfaces of the meniscal fibers, and that they are somewhat in doubt as to the relationship of the cysts to dilated lymph channels. In this latter view they lean toward the idea expressed by Goldheizer and approved by Kleinberg. Henschen, in a publication of Silfverskiöld says the cyst lining is composed of endothelium and Kerr, who expresses an opinion of the pathology in Orr and Heggie, insists on its being composed of condensed fibrous tissue.

Data: The surgical group of menisci previously mentioned as forming the basis of study of degenerative and cystic changes were examined microscopically without foreknowledge of the gross appearances or clinical findings which had prompted their removal. In three cases the internal meniscus had been removed, in three the external and in three cases the site was not recorded.

Two menisci were from males, ages $9\frac{1}{2}$ and 35 years respectively, and six were from females, the youngest of whom was $4\frac{1}{2}$ years and the oldest 27 years. In one case the sex was not stated. Of the nine cases, six were under 10 years of age.

The menisci had been fixed in Zenker's or Bouin's fixative and embedded in paraffin after dehydration with alcohol and clearing in cedarwood oil and xylol. Sections were made from several areas of each meniscus, 10 μ in thickness, and stained by Wolbach's modification of Mallory's alum hematoxylin and eosin, Mallory's phosphotungstic acid hematoxylin, Mallory's aniline blue, and in some instances by Weigert's elastic tissue stain.

The entire group presented a histological picture which is essentially identical in all instances. The features noted in each of the cases differ from one another in only a quantitative aspect. The varying stages from the earliest alteration of structure to multilocular cyst formation are to be found. Some of the menisci demonstrate nothing more than the early changes, but others show the entire sequence of events in a single meniscus. Again, while several of them depict a more advanced picture than the earliest changes and may be looked upon as intermediate phenomena in cyst formation, all of these are found to be identical with the phases seen in those cases which show well developed cysts. Accordingly the pathologic picture, as described here, will present a

composite view of the group rather than a description of each specimen as a unit.

The earliest changes to be seen consist of marked edema and fragmentation which involve both the vascular and avascular areas, and appear to be of about equal degree in each of them. The collagen fibers are frayed, swollen, more curled and oftentimes ruptured in portions. There are spaces to be found between the collagen masses which were previously filled by edema fluid. Early degenerative changes follow the above and manifest themselves by considerable variation in the staining reaction of the tissue from place to place in irregularly outlined and distributed areas. This is in turn followed by more advanced degenerative changes which may be divided into four types. All of these types may be present in the same specimen. They are to be designated as hyaline, mucoid, fibrinoid and granular. The last three of these appear to represent a process of some longer duration than does the first. The mucoid, fibrinoid, and granular degeneration is succeeded by the formation of cystic cavities of a multilocular character, which demonstrate considerable variation in size, shape, and content. The latter feature is one which has received little attention except from Wolbach. The changes referred to above may be found to an equal degree in any portion of the meniscus, and it is certain that the degenerative changes are not confined to the avascular or vascular areas. Although cyst formation is more prominent in the vascular area, definite though small cyst formation is recognizable in the avascular portion. In one instance calcification was seen in addition to the degenerative alterations referred to above. This is a somewhat older manifestation of tissue change than the degenerative changes themselves.

Accompanying the phenomena of edema and fragmentation of collagen when these are unattended by degeneration, one notes no proliferation of connective tissue or blood vessels. However, about areas of degeneration with or without cyst formation, there are areas in which varying degrees of proliferation of fibroblasts are to be seen. This is not a constant finding, however, and the amount present is quite variable but appears to be in greater amount and more consistently present in the menisci which show the greater amount of degenerative change. In the areas of cyst formation this vascular type of organization seems to be more prominent than in the regions where cysts are not found.

The proliferation of vascular endothelium with the formation of numerous prominent nests of small blood vessels is a prominent feature of the menisci observed in this study. The phenomenon is noted in those which demonstrate a picture of degenerative change beyond variation in staining reaction of the tissue, and may be seen without it. It is found in the presence and absence of cysts and bears no relation-

ship to the proliferation of fibroblasts. It, like the latter, is variable in amount. The nests of cells stand out especially in the peripheral, so-called vascular portions, of the menisci. They appear to progress from this portion and invade the less vascular area of the structure so that prominent groups are to be seen in the innermost and densest parts of the meniscus.

Within the areas of degeneration are seen several kinds of material corresponding to the type of change, viz. hyaline, mucoid, fibrinoid, and granular. These appear to have as their only source breakdown of the dense collagenous fibers of the meniscus. The cysts in many instances are filled with varying amounts of the last three, while in the remainder they are empty. (No cysts were noted in those areas showing only hyaline degeneration.) The fibrinoid material and granular debris fail to give a specific reaction for fibrin, when studied by special stains, and we do not feel that they can take their origin except as mentioned above. The mucoid material stains a faint blue with aniline blue and a faint reddish-brown with phosphotungstic acid hematoxylin.

The cysts of larger size, as has been mentioned previously, are found more prominently in the periphery of the meniscus. The walls of the cysts both large and small have no specialized lining. In a few instances, especially in those of the smaller variety a few nuclei are demonstrable but these present no arrangement or other characteristics which would justify their being designated as a definite lining membrane. The cysts are formed by loss of meniscal substance producing a defect. Products of the degenerative change recognized in the cavities have been discussed previously as being found in varying amounts covering the wall of the defect but beneath this material is found only that portion of the collagen mass not lost by degenerative change. The effect is comparable to the procedure of coring an apple with an instrument. The portion removed leaves a defect extending into the substance of the fruit and the wall of the cavity is composed of the adjacent pulp with no more definite lining.

The presence of evidences of an inflammatory reaction in the nature of slight infiltration by small lymphocytes and macrophages was noted in one case, while in another small perivascular collections of small lymphocytes were noted. In two instances, in adults, pieces of synovial membrane submitted with the menisci showed evidence of synovitis in the form of thickening, increased vascularity and infiltration by lymphocytes and macrophages. One of these accompanied one of the menisci mentioned above. No inflammatory changes were seen in the remainder of the sections. No evidences of old or recent hemorrhage were noted in any of the menisci examined.

The older blood vessels of the menisci were examined for changes in their histologic structure. In

six instances, they appeared normal. In the remaining three menisci a slight to moderate degree of thickening of the intima of the arterioles due to proliferation was noted in a few instances. The intimal changes were accompanied by an increase in the media of a like degree. No complete obliteration of vessels was seen. The veins appeared normal in all of the sections.

Gross examination of the menisci described histologically above presented a varied picture in contrast to the more uniform microscopic features. In three cases the meniscus was large, rubbery in consistency and discoid in form; in one instance it appeared ring-shaped in outline; another showed a so-called bucket handle feature; two were of the usual shape but somewhat enlarged and thickened with the consistency of those mentioned above, and the contour of the remaining three is indefinite because the specimens were submitted as fragments. Cysts were noted grossly in two of the specimens but demonstrated microscopically in all.

Discussion: The fact that three of the menisci were of the discoid type will be disregarded in this paper as far as its embryological significance is concerned. It is interesting to note that the gross features of these menisci belong to the embryo while the histologic picture is more in keeping with the age of the patient.

In connection with the theory of congenital origin of cysts of the menisci it is noted that no cysts have been reported in the menisci of embryos nor have they been recorded as having been found in any of the menisci which have regenerated after removal of the original structure. The regeneration of menisci has been noted in both the human and experimental animal by Pfab, Mandl, Jones, Fisher, Gibson, Baz-zocki, and Bruce and Walmsley.

Our material demonstrated no features in support of the theory that degenerative changes are preceded by hematoma formation.

The theory of the presence of degenerative changes originating in the structures outside of the meniscus and extending into the latter as Fisher and Bristow suggest does not seem to bear up under the weight of evidence in favor of the cystic formation being primarily within the substance of the meniscus. Cystic formation in extrameniscal tissue may be a similar process, however.

It is possible that changes in the synovial fluid may play some role in the production of degenerative changes but one may well note that conditions which produce rather marked alteration of this fluid are far more common than are cysts of the menisci.

Elmslie's suggestion that the cysts are primary in the synovial membrane must be considered in the light of several anatomic facts: first, cysts are more com-

mon after the synovial membrane is less widely distributed than in fetal life; second, cysts are distributed throughout all portions of the menisci while synovia is found to cover a relatively small portion of them; third, accompanying the most extensive cyst formation within the menisci we have not been able to demonstrate changes to suggest a similar process within related portions of the synovia.

As far as we have been able to determine from the literature and our own studies we have found no definite evidence to support any more than slight reparative activity. This would not confirm the ideas suggested by Pyle and Collins that cysts heal spontaneously.

The secretory theory of King does not appear to have been borne out for there are no cells related to the cysts which are capable of secreting the material found in the cysts. There is more histologic evidence that the cyst contents are products of degeneration of collagen.

The congenital theory of Ollerenshaw et al. seems to have little positive evidence to support it and the reasons he mentions as the foundation of the theory do not lend it sustenance. It is to be remembered in this connection that the menisci are well developed and of adult form several weeks previous to the formation of the synovial membrane. It is quite unlikely that portions of this membrane could be included within the menisci during their embryological stages. Also the synovial membrane becomes differentiated several weeks after the capsule, joint cavity, and interarticular ligaments are developed. The wall of the cysts in no way resembles the histologic picture of synovial membrane and this fact is an important feature which fails to rise to uphold this theory.

The suggestion of Geschicter and Lewis that the cysts developing at the point of junction of the perichondrium and synovia is in favor of synovial inclusion as their origin is invalidated by the presence of cysts in all portions of the meniscus and the fact that the earliest changes preceding cyst formation as well as the youngest cavities are frequently and most often found in a region away from the point they favor.

Formation of cavities by mere splitting of fibers along parallel planes as advocated by Campbell, Mitchell and McIntosh as the mechanism of cyst production is untenable in view of the degenerative changes described and the fact that the shape of the cysts is not in keeping with such a phenomenon.

One may well be skeptical of the role of the ageing process in the production of meniscal cysts when the degenerative changes preceding cyst formation as well as actual cysts are seen at the presumably tender ages of 4½ and 6½ years in this series.

The relation of the cysts to vascular or lymphatic endothelium as promulgated by Kleinberg does not

appear possible as far as our material can serve as corroboratory evidence. The cysts are not lined by endothelial cells. Vascular changes are not constant and appear out of proportion to the cystic changes present.

Metabolic disturbances as a cause of degenerative changes followed by cyst formation are certainly to be kept in mind as a possibility. Although we knew of no dyscrasias of this type in our patients, we willingly admit that there remains much which is not known about metabolic phenomena and that future investigation is likely to reveal numerous enlightening and important truths.

The finding of degenerative changes in menisci removed from cadavers with the high incidence and age range reported by Burman and Sutro as well as Tobler, holds very interesting speculative possibilities. However, it gives no lead as to the etiologic factors concerned in reproduction other than to suggest some of the possibilities which we have previously discussed. None of the menisci from autopsy cases examined by us showed evidences of degenerative alterations in structure. They were, however, under 12 years of age in all instances. Bircher's figures are well supported by this study in as much as degenerative changes were seen in all the menisci removed surgically while he reports such in somewhat over 50%. We cannot agree with Burman and Sutro that the meniscal degenerative changes noted by them to be associated with arthritis bear any relationship to the etiology in the manner in which they suggest. However, it appears to be quite possible that degenerative changes in the menisci may, if not treated by meniscectomy, lead to arthritic disturbances or the same factors responsible for some arthritic changes may also be responsible for degeneration of the menisci.

The relation of vascular changes to meniscal degeneration and cyst formation appears to us to be merely coincidental with no etiologic connection. This is because of the fact that the incidence of alteration in the blood vessels is entirely out of proportion to the degeneration both in incidence and amount. Also the formation of new vessels throughout the menisci examined by us would certainly more than compensate for any decrease in blood supply occasioned by the alterations we observed. It does not seem that the minor degrees of vascular lesions could have caused any decrease in nutrient supply. Cystic changes are more prominent in the region of vascular supply and are found as well in those normally avascular areas which probably derive their nutrient from the synovial fluid. There appears little evidence to agree with Phemister that the vascular alterations are a part of the degenerative process for reasons stated above, as well as the fact that alterations described by us included no degenerative lesions of the vessels.

Our findings also do not agree with those of Burman and Sutro, Ledderhose or Ebner.

The inflammatory changes found in two cases were of decidedly minor degree. In none were evidences of an acute process noted. We feel, therefore, that there is no evidence to support the idea of the meniscal changes being due to infection. It is quite possible that the inflammatory reaction is caused by the degenerative changes bearing in mind that such cellular infiltration may be caused very well by numerous agents other than those of a bacterial nature.

The inside of the cyst does not appear to have any resemblance to the lymphatic endothelium as Goldheizer and Kleinberg claim. At this point we would wish to offer our objection to the term synovial endothelium inasmuch as the synovial lining of the joint is not endothelium as we consider it at an earlier point in this paper. A great deal of the confusion has arisen in the literature because of the use of the term endothelium in different meanings by various authors. A definition of the term endothelium as used by Ollerenshaw has been given by his pathologist, Jenkins, as "any specialized layer of cells derived from the mesoderm and lining a cavity." We wonder if in keeping with this definition they would call the lining of the renal pelvis, calyces, and ureters endothelium inasmuch as these structures derive their lining from the Wolffian duct which is of mesodermal origin. If a uniform and more accurate meaning of the term endothelium were adopted by those authors who describe the cysts as being lined by endothelium, it seems likely that this term would be used no longer in this connection and the confusion now present because of varied use of the word would vanish. Then there would most likely be none to hold forth for an endothelial lining with the possible exception of those who adhere to the present idea of Kleinberg.

At this point it might be well to emphasize the fact that the synovial membrane arises on the inner aspect of the articular cavity by a mere modification of arrangement and with slight changes of configuration from the fibroblasts of the area. It varies in thickness from place to place over the inner surface of the joint. As suggested by Bremer, as well as Maximow (Bloom) and Coudry, it may be termed mesenchymal epithelium. It presents a fairly characteristic appearance and does not appear to resemble in any way the few cells occasionally seen on the inner aspects of the meniscal cysts. Also, in as much as the cysts are to be found in those areas of the meniscus where no synovial covering is normally present, it is difficult to imagine how synovial inclusions could become incorporated in them as a result of trauma.

We hold the same opinion as Wolbach who felt that the cysts both large and small had no specialized lining. The authors who describe a hyalinized lining, compressed cartilage cells and dense connective tissue

are at little variance with this idea if they compare other regions of the meniscus with the portion immediately around the cyst. We were unable to see proliferating fibroblasts within the cyst cavities such as Taylor described nor could we demonstrate reticulum fibrils as noted by Symmers.

Many authors who have compared the cysts of the menisci to ganglia appear to hold varying opinions as to the pathology of this condition. Study of a group of ganglia has convinced us that they arise by degeneration of connective tissue with formation of a cavity containing the product of the degenerative process, have no specialized lining, and are not derived from the synovial membrane of joints or bursae or the lining of tendon sheaths. Accordingly in keeping with this we feel that ganglia and cysts of the menisci present an almost identical pathologic picture and in many instances one may be unable to distinguish between them.

The varied impressions of the nature of ganglia found in the literature especially those which ascribe a synovial lining are responsible for the confusion which has arisen on this particular aspect of the problem. If those who compare meniscal cysts with ganglia would definitely state their conception of the ganglion, the problem would be much nearer solution and a more uniform opinion probably established.

It is interesting to note the presence of degenerative changes with cyst formation in menisci which showed so called fractures and had been removed because of the latter features. The question naturally arises, therefore, as to the relationship between these phenomena. The idea has been suggested by others and we wish to express our opinion that it is reasonable to doubt the sole role of trauma in causation of ruptures of the meniscus. The sequence of events seems to be degenerative change followed by rupture either spontaneously or aided by trauma. The formation of cysts and production of ruptures in menisci have a like basis, viz. degeneration.

The reason for recurrence of cysts following their enucleation is what one might easily predict from microscopic examination of the menisci in which they occur. This is certainly not a point in favor of their congenital origin as Ollerenshaw has held. This disease process is generalized throughout the meniscus by the time it has become sufficiently advanced to produce cysts.

The greater frequency of cysts in the external meniscus and of ruptures in the internal meniscus leads one to entertain the idea that trauma is the factor which produces the final rupture in some instances. The internal meniscus is more exposed to traumatic assaults and in the presence of degenerative changes rupture occurs with comparatively small injury to interrupt the train of degenerative changes

before the process has progressed sufficiently long to produce cysts which are recognizable clinically or grossly. The external meniscus conversely is naturally more protected by reason of its attachments and the degenerative changes are less liable to be interrupted before the larger cystic cavities have formed.

Contrary to the customary sex distribution in the literature we find in this series that six cases are in females and only two in males. Little significance, however, can be attached to this in view of the small size of the series except possibly to suggest that trauma plays a very questionable role in the causation of degenerative changes of the menisci. We wonder about the validity of the opinion that females are less exposed to traumatic episodes, especially in childhood.

The influence of trauma in the production of cysts appears to be an indefinite one. The more marked degeneration in our cases was seen in the absence of a definite history of trauma. Such a history has not been obtained consistently in the cases reported in the literature. A traumatic prelude to the ruptures of the meniscus is a fairly common finding but as mentioned previously it would seem that the rupture could occur without it. There is certainly little universal agreement in the literature as to the importance of trauma. We feel that it probably has little or nothing to do with degeneration and cysts of the menisci.

Due to the fact that this study incorporates primarily lesions found in children, it is impossible to advance data concerning the relative frequency of degenerative lesions of the menisci in the child and adult life.

The fact that larger cysts are found in the periphery of the meniscus, viz. the vascular portion, is a feature which is rather difficult to explain. Although we are unable, at the moment to offer reasons for this phenomenon we do not feel that it is to be answered by the statement that this portion of the meniscus is more exposed to trauma as several authors have suggested, and are not inclined toward the view of Taylor. He contends that pressure of the condyles on the menisci pushes the cysts to the peripheral position. Our opinion is that the cysts develop at the points of degeneration and can change position or size only by extension or enlargement of the degenerated area.

CASE SUMMARIES

Case I. This 4 6/12-year-old white female was admitted because of pain in the left knee for two months on one occasion, and a sensation of snapping in the knee on extension during the previous month. She had no other complaints. There was no statement as to presence of trauma. The family history was negative. Tonsillectomy and adenoidectomy had been

done at 2½ years of age and epidemic parotitis occurred at 3 years.

Examination showed a well developed and nourished white female child. The positive findings were: small tonsillar remnants; a clicking sound noted in left knee during extension and felt at about 170 degrees of extension with a sensation of something slipping beneath the examining finger over the external aspect of the joint. There was no atrophy of the thigh.

Laboratory data: RBC. 4,450,000; HGB. 80%; WBC. 7850. Urine, throat culture for K.L. bacillus, and tuberculin test were negative. Schick test was positive. X-ray examination of the knees showed nothing unusual.

The child was believed to have a cyst of the external meniscus.

Operation: Under avertin and ether anesthesia, and using a tourniquet, the left knee was explored through a 10 cm. Kocher incision. When the incision had been carried down to the joint capsule a large mass could be seen to jump into prominence during extension of the knee, and a snap could be heard at this time. The mass was found to be a large discoid meniscus about three times as thick and wide as normal. It was excised. The wound was closed in layers with silk. The leg was immobilized by a posterior plaster slab holding the knee in slight flexion, and the foot at a right angle to the tibia.

Postoperatively a small amount of joint effusion was present but this gradually disappeared during the following 3-4 weeks. The wound healed by first intention and the sutures were removed on the 10th postoperative day. Quadriceps setting exercises were started at this time. She was discharged on the twenty-first postoperative day, at which time the plaster had been removed but she was not bearing weight. Physiotherapy was given three times weekly and when weight bearing was allowed at the end of six weeks she had a normal range of motion in the joint. She developed a slight degree of lateral mobility of the joint which later disappeared. When last seen two years after operation, there was no apparent difficulty. There was no thickening about the joint. She has had slight attacks of transitory pain on odd occasions.

Case II. This 6 7/12-year-old white female was admitted because of frequent attacks of pain in left knee with swelling and tenderness especially on the lateral aspect, of three months' duration. There was increased pain on motion and inability to extend the knee beyond 135 degrees. There was no clicking. No history of trauma was elicited. Attacks occurred 1-3 times weekly and were of 2-3 days' duration. She was well except during attacks which appeared both while sitting and during active play.

There was a past history of varicella, epidemic parotitis, pertussis and a burn of the right shoulder at the age of 3 years.

Examination showed a well developed and nourished white female. Temperature 98.8, P. 100, R. 22. The positive findings were confined to the left leg which showed ¾-inch atrophy of the thigh and ½-inch atrophy of the calf. In addition there was a definite cystic mass on the superior edge of the lateral condyle of the tibia. Range of motion was normal. A cystic mass could be pushed into the joint on extension of knee.

Laboratory data: RBC. 4,300,000, WBC. 7300, urine negative, throat culture negative for K.L. Wassermann and Hinton, Tuberculin and Schick — negative.

She was operated on under Avertin-ether anesthesia, using a tourniquet. A curved J-shaped incision was made on the lateral aspect of the left knee just lateral to the lower border of the patella over the joint line extending laterally and superiorly for a distance of about four inches. The mass felt on physical examination could now be seen projecting through the capsule of the joint. The joint was entered and the left external meniscus was found to be enlarged with marked thickening over its postero-lateral border in front of the external lateral ligament. The meniscus was found to project well onto the articular surface of the lateral condyle of the tibia. It was dissected free and the leg could be completely extended. The joint was closed in layers with interrupted sutures of silk. The leg was immobilized in 10 degrees of flexion by means of a posterior plaster slab.

Postoperative course was marked by moderate effusion into the joint which became more marked when she was allowed to walk with crutches on the 11th day after having had quadriceps setting exercises and active motion from 5th day. Sutures were removed on the 12th day. The wound healed by primary intention. However, it was felt she should remain in bed with quadriceps exercises until atrophy of thigh had disappeared. On this regime the effusion promptly subsided and power in the quadriceps improved. She was allowed to walk with crutches on the 36th postoperative day, at which time she was discharged. When last seen six months later, she had normal motion in the left knee without pain or recurrence of previous symptoms.

Case III. This 7 1/12-year-old white female entered the hospital because of "catching of the right knee when kneeling and inability to straighten it afterward." One year previously, while sitting with knees acutely flexed she "felt something snap in her right knee." This was followed immediately by acute pain on the postero-lateral aspect of the knee. She was unable to straighten the knee at this time. How-

ever, with an attempt to stand, it fully extended and the pain disappeared at once. Since the onset she had had eight episodes of similar nature.

The attacks subsequent to the initial one occurred while kneeling, sitting or during active play. The sitting position favorable to precipitation of attacks was with the patient placing her weight on her right leg with the thigh flexed, and externally rotated and the tibia adducted on the femur so that the medial aspect of the right foot was beneath the left buttock and the left leg was flexed over the end of the chair. She has always been able to cause disappearance of symptoms by forceful extension.

Her mother was deaf; the mother had had 1 full term child who died at birth of unknown cause, as well as two miscarriages at three months, cause undetermined; paternal grandmother died at 34 years from "hemorrhage from lungs;" paternal grandfather died at 45 years—"dropsy;" maternal grandfather died at 57 years—heart trouble.

P. H. Scarletina and varicella at 2 years. Pertussis at 3 years. Rubeola at 4 years. Bronchitis at 5 years, and epidemic parotitis at 6 years. Incision of cervical glands on the right following scarletina. During previous two years she had been treated by the family physician for moderate enlargement of the heart with a murmur which had been detected by the school physician.

The positive findings on examination were: well healed operative scar 5 cm. in length beneath right ear along anterior border of the sternocleidomastoid muscle; large number of small shotty freely movable glands in anterior and posterior cervical triangles, bilaterally; slight flaring of the costal cage; slight enlargement of the heart to the left, especially at the base; P.M.I. in 5th left interspace inside M.C.L., first sound prolonged and slightly coarser than normal, short systolic murmur most prominent at the apex, and transmitted to the vessels of the neck, P₂ louder than A₂, duplicated second sound at base heard inconstantly following slight exertion, questionable diastolic murmur at 4th interspace to left of sternum, normal rate and rhythm with increase of former on slight exertion; slight atrophy of right thigh; walks with slight limp due to quadriceps weakness on this side; moderate pronation of the right foot; thickening of capsule about the right knee especially on the medial aspect and over the joint line; no tenderness; crepitation noted on flexion, extension, and rotation of the tibia on the femur. There was 1/2-inch atrophy of the thigh on the right.

Laboratory data: RBC. 4,750,000, Hgb. 100%, WBC. 12,200. Urine, throat culture for K.L. bacilli, tuberculin, and Schick tests negative. X-rays of knees showed nothing remarkable. The clinical impression was that she had a hypermobile internal meniscus on

the right with a possibility of rupture of this structure.

Operation: Under Avertin-ether anesthesia and with tourniquet, the medial meniscus of the right knee was exposed through a median parapatellar incision. The meniscus was found only slightly more mobile than normal and was removed. Exploration of the joint had revealed no other abnormality. The wound was closed in layers with interrupted sutures of silk. The leg was immobilized with a posterior plaster slab with the knee in 10 degrees of flexion and the foot in dorsiflexion of 90 degrees.

The postoperative course was essentially uneventful. The sutures were removed on the 14th day when the wound was examined for the first time. Slight sepsis at upper angle of wound allowed separation 2 days later, but healed promptly. At the end of three weeks, physiotherapy in the form of baking, massage and quadriceps setting exercises in addition to Faradic stimulation. She was allowed to walk with the aid of crutches at the end of six weeks. At time of discharge, 7 weeks after operation, she had 30 degrees of motion without pain in the right knee and there remained considerable atrophy of the right thigh.

The patient was followed in the O.P.D. and received physiotherapy three times at the hospital in addition to exercises at home. When last seen, 2 1/2 years after operation, she showed full extension power in right knee, flexion to 130 degrees without pain and good quadriceps power. No return of old symptoms. One week previously she had injured the right knee in a fall. This was followed by effusion into the joint and limitation of motion and subsided promptly on application of a plaster cast and restriction of weight bearing for one week.

SUMMARY

The literature on cystic disease and degenerative changes of the menisci is reviewed. A group of normal and abnormal menisci were studied microscopically and the pathological features encountered in those having grossly recognizable cysts compared with those which had been removed because of rupture of the menisci or congenital anomalies. Embryological features of the menisci and synovial membrane of the knee are briefly considered in relation to formation of cysts. Various theories as to the etiology and nature of meniscal cysts are evaluated in the light of the findings. The sequence of events seen in the pathogenesis of meniscal cysts is described. The theories recorded in the literature are discussed as regards the etiology, nature and pathogenesis of these lesions as well as their relationship to ruptures of the menisci. A theory to explain the greater incidence of cysts in the external meniscus and of ruptures in the internal one is advanced. Summaries of cases are included to illustrate some of the clinical features encountered.

CONCLUSIONS

1. Cysts of the menisci are produced as the result of several types of degeneration of the connective tissue.
2. The cysts have no specialized lining.
3. Synovial membrane is not endothelial in nature.
4. Cysts of the meniscus present a histologic picture like that seen in ganglia and myxomatous intracutaneous cysts.
5. There is no histologic resemblance between meniscal cysts and the synovial membrane to suggest relationship between them.
6. Some of the so-called ruptures of the menisci may well be spontaneous in nature due to a degenerative lesion of these structures.
7. Cysts of the menisci may recur if the entire meniscus is not removed.
8. The relatively greater exposure of the internal meniscus to trauma may explain the greater frequency of rupture of this structure and the greater incidence of cysts in the external meniscus.
9. Trauma has little or no etiological relationship to the production of degenerative changes and meniscal cysts.
10. The etiology of the degenerative process responsible for the production of cysts of the menisci remains obscure.

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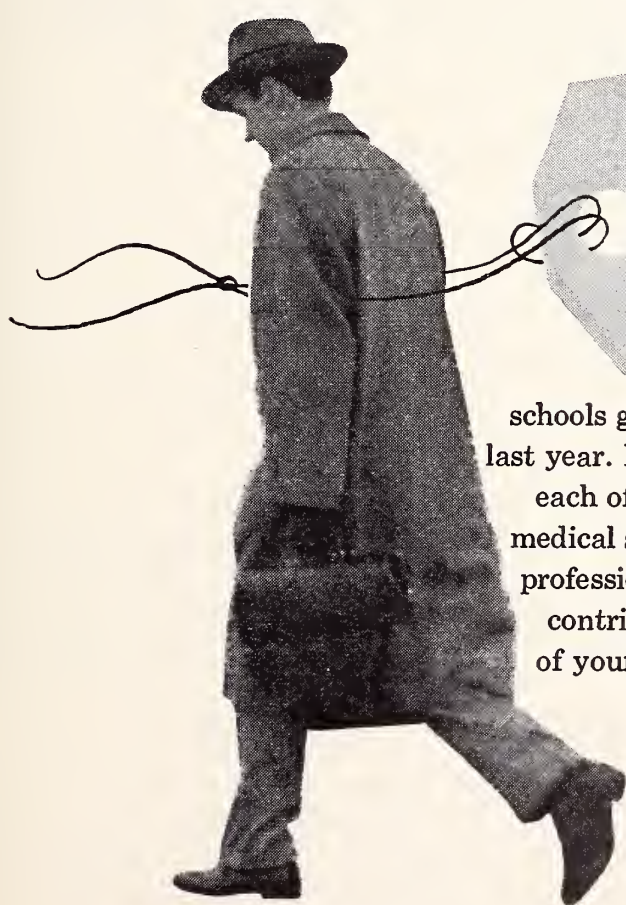
PRESIDENT'S PAGE

**The American Medical Education
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The age expectancy in the United States has reached sixty-eight years. What a gratifying commentary on the excellence of medical practice, scientific research and medical education in this country! To have a part in the implementation of this program is the high privilege of every practicing physician. But to insure its continuation in the face of the large annual financial deficits confronting our seventy-nine centers of medical education commands substantial moral and monetary contributions by all who have a

real interest. No more intimate concern is conceivable than from within our own ranks. I urge all physicians therefore to give heed to the urgency of the need and to consider thoroughly to what extent they will voluntarily contribute to the American Medical Education Foundation in this and succeeding years.

C. HAROLD JAMESON, M. D.,
President,
Maine Medical Association.



America's medical schools graduated 6,135 new doctors of medicine last year. It costs more than \$13,356 to train each of them. Most of this becomes medical school operating deficit which we as a profession must help meet. We will send your contribution along to the medical school of your choice if you prefer.



**American Medical
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EDITORIAL

Pertinent Facts About the Annual Session

Place and Dates: The Annual Session will be held at The Samoset, Rockland, Maine, Sunday, Monday and Tuesday, June 22, 23 and 24. Check your calendar and make sure that you have these dates set aside for attendance at your own State Meeting.

House of Delegates: The First Meeting of the House of Delegates will be on Sunday, June 22 at 3.00 P. M., and the Second Meeting on Monday, June 23 at 4.30 P. M.

Scientific Program: Dr. Loring W. Pratt of Waterville, Chairman of the Scientific Committee, has covered this phase of the program in recent issues of the JOURNAL under the heading of "Progress Notes." The Program in Brief will be published

in the May issue of the JOURNAL and the complete Program in June.

Hobby Exhibit: If you wish to participate in this exhibit please send information relative to your entry to the Maine Medical Association, 142 High Street, Portland 3, Maine.

Woman's Auxiliary: The Program for this group will be published in May and June.

Technical Exhibits: Plan now to spend a part of your time at the annual session with representatives of Exhibiting Companies, and so express your appreciation for their part in making these sessions possible.

PROGRESS NOTES FOR THE ANNUAL MEETING

The remaining part of the Scientific Program will consist of four conferences which will be held on Monday and Tuesday mornings. The complete panel for each conference will be announced later, but below is a summary of the preliminary arrangements.

Monday, 9.30 A. M.

General Surgery

Robert Allen, M. D., Rockland, Chairman

General Medicine

Wilbur Manter, M. D., Bangor, Chairman

Tuesday, 9.30 A. M.

Obstetrics—Gynecology

Kenneth Sewall, M. D., Waterville, Chairman

Radiology

Jack Spencer, M. D., Portland, Chairman

It is the intent of these conferences to supply a capable board of specialists to which problems may be presented and discussed freely among both the participating members of the conference panel and the physicians attending the conferences. Members of the Society are urged to come, present, and discuss problems at this conference.

The radiologists would particularly like to have both diagnostic problem cases and proven cases with unusual X-ray problems for their conference. Anyone who has such films is urged to bring them. They will be projected on a large screen again this year.

LORING W. PRATT, M. D.,

Chairman, Scientific Committee,
Waterville, Maine.

Suggested Amendments to the Constitution of the Maine Medical Association

Articles VI and VIII of the Constitution shall be amended to read as follows:—

"Article VI

Council

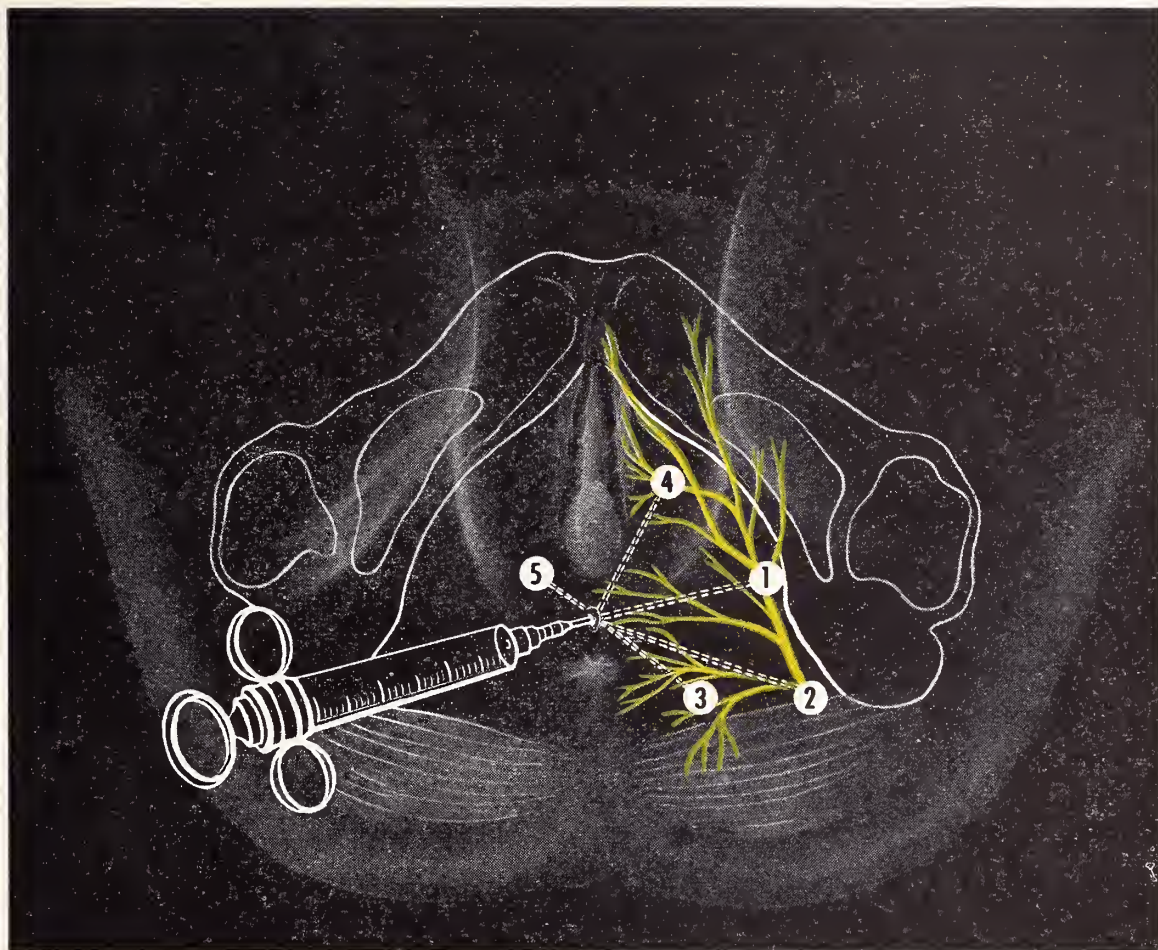
The Council shall consist of the President, President-Elect of the Association, Secretary-Treasurer of the Association (if a member of the Association), the immediate Past President, the delegate to the

American Medical Association, and one Councilor from each Councilor District. Seven members shall constitute a quorum."

"Article VIII

Officers

The officers of this Association shall be a President, a President-Elect, a Secretary-Treasurer (if a member of the Association), and a Councilor from each Councilor District."



Sites for injection of local anesthesia in obstetrics. Sites 1 to 4 should be similarly injected on the contralateral side. Site 5 is for episiotomy. Adapted from Johnson, O. J.: Nerve Block in Painless Childbirth, *J.A.M.A.* 145:401 (Feb. 10) 1951.

Pudendal Block in Obstetrics Simplified with **ALIDASE**

Using a local anesthetic with hyaluronidase, Heins¹ reports: "Complete perineal anesthesia is practically instantaneous. . . . The technique of pudendal block is greatly simplified. The operator does not have to inject the nerve per se, but infiltration in the vicinity of the nerve will accomplish an effective block."

Baum² states: "The use of hyaluronidase is found to be a safe and simple method for increasing the efficiency of pudendal block in obstetrics and for overcoming many of the objections to this type of obstetrical anesthetic."

ALIDASE[®]—highly purified, well tolerated brand of hyaluronidase—definitely shortens the period between completion of the block and establishment of operating analgesia. Swelling, induration and discomfort are almost negligible with Alidase.

¹Heins, H. C.: Pudendal Block with Hyaluronidase, *J. South Carolina M. A.* 46:309 (Oct.) 1950.

²Baum, F. E.: The Use of Hyaluronidase in Pudendal Block, *Am. J. Obst. & Gynec.* 60:1356 (Dec.) 1950.



COUNTY SOCIETIES

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COUNTY SOCIETY NOTES

Kennebec

A regular meeting of the Kennebec County Medical Association held at the Augusta House, Augusta, Maine, February 21, 1952, began with dinner served to nineteen at 7 P. M.

President Sleeper opened the business session, calling for the record of the last meeting which was read and approved.

Richard N. Fallon, M. D., of Augusta, was elected to membership.

On inquiry by the President whether we should pay more (25c) and continue to have roast beef, a large majority voted to do so.

President Sleeper then introduced Langdon Parsons, M. D., of Boston, whose subject was "Cancer of the Female Pelvis"—an illustrated lecture dealing with the lesions of the external genitalia, and internal—cervix, endometrium, ovary—diagnostic and surgical procedures,—stressed the importance of early operation and the relation (proportion) of this to cures—the type of surgery indicated—when it should be radical—mentioned the importance of the frozen section—recommended it in diagnosis of the cervix, endometrium and some ovarian growths. He gave a very comprehensive discussion of the whole subject; the information, well illustrated, was interesting. A period of several questions followed.

At the close of the business session, the Auxiliary were invited and attended the lecture.

Adjournment followed about 9.30.

A. H. MORRELL, M. D.,
Secretary.

Lincoln - Sagadahoc

A regular meeting of the Lincoln-Sagadahoc County Medical Society was held the evening of February 19, 1952, at the Sedgwick Hotel, Bath, Maine. Seven members were present and several guests including Dr. Kinder and dentists, Dr. Buck and Dr. Wade, and the speaker of the evening, Dr. Eules from the New England Center Hospital.

Because of poor attendance it was decided to again postpone the annual business meeting until the following month. The problem of poor attendance was again discussed, and the secretary was asked to write a letter regarding this to each of the members telling them that this subject would be discussed at the March meeting when this matter would be brought to a vote.

It was suggested that a yearly assessment be made against each member to cover the cost of the monthly society dinners and that these assessments be included as part of the county dues. One reason this seemed necessary was that because of inadequate attendance at the November, December and January meetings it was necessary to write checks totaling \$53.55, in addition to what the attending members paid, to defray the cost of the contracted meals.

The secretary was authorized to write a letter certifying that Dr. Edwin M. Fuller had been a society member in good standing for the purpose of transferring his membership to the Connecticut Medical Society.

Dr. Eules presented a paper on the "Abnormalities of Menstruation," defining same and discussed the mechanism involved. This gave a basis for rational treatment of serious alteration of the function of menstruation. A lively question and answer discussion followed Dr. Eules talk.

M. W. WESTERMEYER, M. D.,
Secretary.

The annual meeting of the Lincoln-Sagadahoc County Medical Society was held at "The Ledges," Wiscasset, Maine, on Tuesday evening, March 18, 1952.

The problem of poor attendance was again discussed. A motion was made by Dr. Francis A. Winchenbach, seconded

by Dr. Rufus E. Stetson, and carried, that seventy-five percent attendance of all scheduled meetings would be required of each society member in order to keep him in good and regular standing. Motion was made by Dr. Robert W. Belknap, that we inaugurate a rule that each society member be required to notify the secretary or the hostelry before each meeting of any expected absence. It was suggested that a letter be written to each absent member regarding the above action. The delegates to the interim meeting of the House of Delegates of the Maine Medical Association were instructed to have an open mind.

The ethics of not charging fees to indigent patients hospitalized under the state aid program was discussed. The fact that the vital statistics in Maine for 1950 showed 255 babies born that were not registered, and the importance of the physician's responsibility in this matter was mentioned.

The society was informed regarding the group sickness and accident insurance offered to members of the Maine Medical Association, and from the interest shown it seemed that about fifty percent of the members would be interested.

New Business: The president appointed a nominating committee consisting of Drs. Virginia C. Hamilton, Samuel L. Belknap and Francis A. Winchenbach. This committee then proposed the following slate of officers:

- President, John F. Dougherty, M. D., Bath.
 - Vice President, Robert W. Belknap, M. D., Damariscotta.
 - Secretary-Treasurer, M. W. Westermeyer, M. D., Bath.
 - Delegates to the Maine Medical Association: Francis A. Winchenbach, M. D., Bath; and Arthur A. Nichols, M. D., Wiscasset. Alternate, Stanley R. Lenfest, M. D., Waldoboro.
- A motion was made that the secretary cast one vote for the above group of officers as a whole.

Dinner was served to thirteen society members and four guests. Dr. Mandes of the New England Medical Center Hospital gave a very interesting and helpful discussion regarding the "Diagnosis and Treatment of Headache."

M. W. WESTERMAYER, M. D.,
Secretary.

York

The March meeting of the York County Medical Society was held at Alfred, Maine, March 12, 1952.

Dr. Carl E. Richards entertained at his home from 12.30 to 1.30 P. M., after which we went to the Congregational

Church vestry for dinner. A fine chicken pie dinner was served by the ladies of the Parish. A very interesting talk was given by Arthur Berk, M. D., followed by a lively discussion and question and answer period.

It was voted to make night calls \$5.00 from 6 P. M. to 7 A. M.

The next meeting will be held at the Webber Hospital in Biddeford. Dr. William F. Mahaney will be chairman of arrangements.

Drs. Bacon and Cobb were appointed a committee to arrange a Boston meeting in May or June.

There were 20 members and 2 guests present.

Members: Melvin Bacon, M. D., Ralph S. Belmont, M. D., Stephen A. Cobb, M. D., Kenneth J. Cuneo, M. D., William E. Dionne, M. D., Andre P. Fortier, M. D., Marcel P. Houle, M. D., Edward W. Holland, M. D., W. H. Kelley, M. D., C. W. Kinghorn, M. D., J. R. LaRochelle, M. D., Charles Lengyel, M. D., L. C. Lesieur, M. D., A. Lincourt, M. D., J. H. Macdonald, M. D., W. F. Mahaney, M. D., Carl E. Richards, M. D., H. D. Ross, M. D., W. T. Roussin, M. D., and R. D. Vachon, M. D.

Guests: Arthur Berk, M. D., and W. Mayo Payson.
C. W. KINGHORN, M. D.,
Secretary.

Hancock

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, on March 12, 1952.

Members present were: Dwight Cameron, M. D., James H. Crowe, M. D., A. M. Joost, Jr., M. D., Hyman Millstein, M. D., Edward Thegan, M. D., M. A. Torrey, M. D., and H. T. Wilbur, M. D.

The meeting was opened by Dr. Herbert Wilbur, vice president. The minutes of the last meeting were read and approved. Dr. Arthur M. Joost, of Bucksport, was elected secretary-treasurer to replace Dr. Joseph H. Hanson.

Lieutenant Marriner of the State Police spoke on "Alcohol and the Law" from the point of view of the police officer. Considerable discussion followed with criticism of the blood alcohol test as now performed. Judge Percy T. Clark then spoke on the same subject from the judicial and legal point of view.

A. M. JOOST, JR., M. D.,
Secretary.

NECROLOGY

Fay F. Larrabee, M. D.
1881 - 1951

Doctor Fay F. Larrabee of Washburn, Maine, died May 30, 1951, at the Presque Isle General Hospital following a week's illness.

He was born December 14, 1881, at Brockton, Maine, the son of Charles C. and Annie Marble Larrabee.

He received his Degree in Medicine at the University of Maryland Medical School. He settled in Washburn in 1909 and served that community and the surrounding countryside, giving unstintingly of his strength and knowledge to relieve the suffering of mankind. None but a country doctor can best describe the rigors of Aroostook winters.

That he lived true to his oath was very vividly brought to

focus in the mute testimony of his patients who came many miles from remote settlements to pay their last respects. Reserved in manner and speech, yet his philosophy of life had the wisdom of a sage, and his daily life spoke eloquently of his stability and strength of character.

He was a member of Aroostook and Maine Medical Societies, American Medical Association, the Masonic Blue Lodge, Commandery of Ellsworth, and past member of Washburn Rotary Club.

Surviving besides his wife, Mrs. Julia Wibby Larrabee, are two sons, Willard W. of Washburn, and Dr. C. Frederic of Bar Harbor, and one granddaughter.

Cysts and Degenerative Changes in the Menisci of the Knee Joint—Continued from page 126

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The author wishes to express his sincere appreciation to Dr. Frank R. Ober, the John Ball and Buckminster Brown Professor Emeritus of Orthopaedic Surgery, Harvard Medical School and Chief Emeritus of Orthopaedic Surgery at the Children's Medical Centre, Boston, Massachusetts, and to Dr. Sidney Farber, Professor of Pathology, Harvard Medical School, Chief of the Pathology Department, The Children's Medical Centre, who made available to him the material for this study and provided stimulation and guidance in their roles of teachers and friends.

HOSPITAL STAFF MEETINGS

Open to the Profession

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital	2nd Thursday
	Notre Dame Hospital	2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General	2nd Thursday
	St. Mary's General	2nd Monday
Portland	Maine Eye and Ear Infirmary	1st Tuesday
	Maine General	2nd Friday
	Mercy	4th Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Monday
Waterville	Sisters	2nd Tuesday
	Thayer	Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.

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The Journal of the Maine Medical Association

Volume Forty-Three

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No. 5

THE IMPORTANCE OF PREOPERATIVE PREPARATION IN THE AVOIDANCE OF COMPLICATIONS DURING ANESTHESIA*

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Thoroughness and meticulous attention to detail in the preoperative preparation of a surgical patient may spell the difference between success and failure of an operative procedure, regardless of its magnitude. When carelessness or considerations of convenience or economy are allowed to interfere with careful preparation, added morbidity or death of the patient may result.

In an effort to minimize accidents during anesthesia and operation, preliminary measures are aimed at the correction of systemic disturbances. This statement presupposes that a careful physical examination and complete history have been obtained, and recorded on the patient's record, and that pertinent laboratory determinations, including an estimation of hemoglobin concentration, have been secured.

The existence of shock generally contraindicates immediate operation, except in certain instances when active hemorrhage cannot be controlled by conservative measures. The liberal use of blood, plasma, and plasma substitutes is recommended before and during operation in such cases. The value of oxygen in the treatment of shock has been questioned by Price and his co-workers on the basis of their experiments,¹ but most clinicians consider oxygen to be a valuable and inexpensive adjunct to therapy with

blood and other fluids. When shock is not attended by continuing hemorrhage, complete restoration of circulating blood volume and red cell mass by transfusions is indicated before operation. By this means the constricted vascular bed is allowed to reexpand to its normal capacity while blood pressure is maintained at a normal level. In recent years attention has been called to a condition of "chronic shock" associated with prolonged illnesses,² and characterized by weight loss, decreased blood volume, decreased blood proteins, and increased interstitial fluid volume. Anemia and hypoproteinemia may be only moderately evident by ordinary tests, in contrast to the profound depletions revealed by blood volume determinations. The amount of whole blood needed to replace these deficits may be accurately calculated provided the patient's normal weight is known.³ Efforts to correct hypoproteinemia by plasma alone are discouraging unless anemia is corrected first with whole blood, because plasma proteins are preferentially utilized to construct hemoglobin in the anemic individual.^{4, 5} Regardless of its etiology, reduction of blood hemoglobin below 70% of the normal value should be corrected before anesthesia, to provide an optimum system of oxygen transportation during the operative procedure.

Common systemic disorders requiring correction during the preoperative period are dehydration, with or without acidosis, and other disturbances of electrolyte equilibrium. Volumes of experimental and

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clinical data have been written about these important considerations and it is not within the scope of this paper to take them up in detail. However, a few facts which we sometimes forget may be worthy of note. Maddock and Collier ascertained that marked signs of dehydration occur when the amount of water lost equals six per cent of the body weight. This would be 600 cubic centimeters in a 22-pound infant, 3600 c.c. in a person weighing 135 pounds, or 4800 c.c. in the case of an individual weighing 175 pounds.⁶ Moore has pointed out that the length of time required to reestablish equilibrium after the necessary volume of water has been administered to the dehydrated patient is approximately two hours; but such equilibrium is not reached for fifteen hours in the case of administered potassium, or for 24 hours in the case of sodium.⁷ Occasionally careless management may result in the development of dehydration during the preoperative period, especially in elderly or in very young patients. The withholding of all fluids after midnight, regardless of the proposed time of operation the following day, is to be condemned as a routine practice. Clear liquids may safely be allowed until four hours prior to operation, and, indeed, should be actively encouraged by the nursing staff. Whenever possible infants and small children should take precedence over older patients for the early openings on the operative schedule.

Other systemic disturbances encountered during the preoperative period include acute infections, severe hyperpyrexia, hyperthyroidism, diabetes, and polycythemia. These conditions increase the risk of anesthesia and operation, and should be treated specifically and symptomatically beforehand, when time permits. In a few instances our staff has delayed operating on patients with diabetic gangrene in need of amputation. By applying a tourniquet below the proposed site of amputation and immersing the extremity in packed ice, a physiological isolation of the gangrenous portion has been accomplished, and generalized toxicity has rapidly subsided. Valuable time was thus provided in which to prepare the patient properly for surgical amputation, which was carried out electively under spinal anesthesia at a later date. Barbour recently called attention to the hazards which attend the administration of anesthesia to patients with polycythemia.⁸ If time allows, 500 c.c. of blood should be withdrawn daily from the polycythemic adult until the hematocrit value falls below 50. In the presence of polycythemia general anesthesia is poorly tolerated, and spinal and regional methods of anesthesia are to be preferred.

Most of the immediate complications of anesthesia are the direct or indirect results of various degrees of oxygen deprivation. It is understandable that the anesthesiologist and surgeon should be vitally concerned with the establishment, maintenance, and pro-

tection of efficient pulmonary and cardiac functions. Tovell and Steven divide pulmonary function into two components, ventilation and respiration. Ventilation consists of the gross movement of air or gases into and out of the lungs. Respiration is defined as the gaseous interchange of oxygen, carbon dioxide, and nitrogen at the pulmonary alveoli.⁹ Many things can be done to protect these processes during the preoperative period. Abnormal or impaired mechanics of ventilation may often be corrected or improved. When ascites interferes with diaphragmatic excursions, removal of abdominal fluid is indicated before operation. Constricting clothing, abdominal supports, binders, or adhesive strapping should be loosened or removed. If injuries to ribs, sternum, or the abdominal wall restrict ventilation because of pain, appropriate nerve block, or the judicious use of analgesic drugs may be of benefit. The existence of a significant amount of pneumothorax jeopardizes ventilation, and the advisability of removing air from the pleural cavity deserves serious consideration.

Adequate ventilation also depends upon patent air passages from the nose and mouth to the pulmonary alveoli. These passages, referred to collectively as the "airway," are prone to become obstructed during anesthesia, with resulting hypoventilation and asphyxia. If partial obstruction of the upper airway is present, it must be alleviated before the induction of general anesthesia. Noteworthy examples of such conditions are Ludwig's angina, and severe injuries about the mandible and larynx. Even the shortest general anesthetic is contraindicated until an adequate airway has been established. Elective preliminary tracheotomy is generally preferred in such cases, although endotracheal intubation under topical Pontocaine anesthesia, with the patient awake, may be satisfactory. Solitary carious teeth and loose teeth are distinct hazards to the safe conduct of general anesthesia, and should be removed beforehand. Preoperative vigilance may avert disaster in instances of small children who occasionally conceal candy or chewing gum in their cheeks on the morning of operation.

One of the commonest dangers to proper ventilation is the regurgitation of gastric contents during the conduct of anesthesia. To proceed with general anesthesia despite knowledge that the patient has, or may have a full stomach is to invite disaster, and is medicolegally inexcusable in most instances. The problem of the full stomach arises most frequently in association with surgical and obstetrical emergencies. Acute trauma, particularly such painful injuries as fractures, severe burns, and crush injuries, arrests normal digestive processes and gastric motility very abruptly. It is safe to assume that when such accidents occur within four hours of the ingestion of a normal meal, the stomach probably contains undi-

gested food, though many hours may have elapsed since the injury itself. Onset of labor produces a similar interruption in normal gastric physiology, even in the absence of significant degrees of pain. Correct management of the patient with the full stomach consists of emptying the stomach completely before beginning anesthesia. This may be accomplished by the oral administration of mild emetics, such as mustard and water, or hypertonic sodium bicarbonate. Stimulation of the pharynx with a tongue depressor may assist the action of these substances. An alternative method especially useful for inducing emesis in small children or uncoöperative adults, is to place the patient on his side, in Trendelenberg position, and allow him to inhale strong concentrations of ether vapor from a gauze mask. After coughing and retching has resulted in active vomiting, and after the mouth has been cleared of all vomitus, induction of anesthesia may be begun. Methods of stimulating active vomiting are much to be preferred over attempts to empty the stomach by gastric lavage, because the latter method fails to remove chunks of undigested food. One of the most serious consequences of improper preparation is the vomiting of particulate matter during anesthesia, with aspiration and mechanical occlusion of the trachea or a main bronchus. The precautions which I have discussed apply if any general anesthetic is likely to be employed. Sodium Pentothal cannot be relied upon to produce anesthesia without vomiting in such situations, and when regurgitation occurs during Pentothal anesthesia it is especially dangerous. Endotracheal anesthesia offers little protection against aspiration of foreign material in the presence of gastric regurgitation.

Surgical conditions other than those resulting from trauma often introduce the hazard of regurgitation during anesthesia. Intestinal obstruction or ileus, and post-operative dehiscence of abdominal incisions tend to allow duodenal and jejunal contents to flow in a retrograde direction and accumulate in the stomach. During the course of anesthesia this material may be actively vomited or may regurgitate silently during the surgeon's manipulations of abdominal viscera. Silent regurgitation is most insidious and dangerous, for aspiration of foreign material may occur before its presence in the pharynx has been noted by the anesthetist. The use of curare and curare-substitutes has increased the incidence of this complication because of the relaxing effects these drugs exert on the gastric cardia. Whenever surgical diseases interfere with normal gastro-intestinal motility or tone, the stomach should be emptied during the preoperative period by means of a Levine tube and the tube should be left in the stomach and attached to a suction apparatus of the Wangenstein type during the course of anesthesia and operation. Infants with pyloric stenosis

should always be protected by the simple maneuver of inserting a number twelve or fourteen French urethral catheter through the mouth into the stomach, and aspirating all gastric contents with a syringe immediately prior to anesthesia.

Certain disease processes involving the distal portions of the pulmonary tree impair ventilation and gaseous exchange in the alveoli, but the adverse effects of these conditions can be minimized if proper measures are undertaken before operation. The existence of chronic bronchitis, emphysema, pulmonary fibrosis, bronchiectasis, or bronchial asthma calls for a period of observation and conservative therapy before an elective operation is performed. When thick, tenaceous secretions impede proper ventilation, treatment is directed at liquifying such secretions by adequate hydration of the patient, removal of such irritants as tobacco and allergenic substances, and the administration of a saline expectorant. If the patient's efforts to rid himself of the liquified secretions by means of coughing are ineffective, his attempts may be augmented considerably by placing him on a rigid schedule of postural drainage. Tracheo-bronchial aspiration with a catheter, or by means of bronchoscopy may be of benefit if postural drainage is unsuccessful. Coexisting infection should be treated with antibiotics to reduce inflammation and the production of mucus. Most of the measures which have just been outlined are required in the patient with severe bronchial asthma,¹⁰ and, in addition efforts are usually directed at relieving spasm of the bronchial musculature by the use of properly selected drugs. Steam or some other method of raising humidity in the patient's room may be useful if edema of the bronchial mucous membrane is present.

Any scheme of preparing patients for operation would be incomplete if it did not include an evaluation of cardiac function. An electrocardiogram is an important aid, but is by no means a substitute for a careful history and physical examination. Individuals with impending or existing heart failure are best digitalized prior to anesthesia, and if the situation is urgent digitalization can be accomplished intravenously in a few minutes with 0.5 milligrams of crystalline strophanthine or ouabain.¹¹ When no emergency exists, simpler and equally effective oral preparations may be used. It is a mistake to proceed with operation before corrective measures have been able to accomplish their salutary effects.

Certain special operative procedures on the heart and mediastinal structures are attended by unusual stimulation of the myocardium or of the nerves supplying the myocardium, with resultant occurrence of untoward arrhythmias. It may be advisable to reduce myocardial irritability in these situations by the preoperative use of quinidine or procaine amide (Pronestyl). While considerable disagreement exists

over the relative merits of these two drugs, there is a growing feeling that their effects may be beneficial when one or the other is administered during the twelve to twenty-four hour period preceding certain operations. When quinidine is employed, three or more doses of 0.2 Gm. each, are administered at regular intervals during the daytime the day before operation, and a final additional 0.2 Gm. is given one hour before operation. Procaine amide (Pronestyl) may be started the day before operation in two or three separated doses of 1.0 Gm. each, or (as recently advocated, a single dose of 1.0 to 2.0 Gm. may be given one to two hours before the induction of anesthesia, and supplemented by the intravenous preparation during operation.¹²

The preoperative use of opiates, barbituric acid derivatives, belladonna alkaloids, and other drugs plays an important part in the safe management of surgical patients. One of the important functions of preoperative medications is to protect the patient from some of the complications which are prone to occur during anesthesia and operation. By allaying apprehension and providing euphoria, opiates and barbiturates in properly selected dosage minimize epinephrine-secretion by the patient before and during the induction of anesthesia. Excessive formation of epinephrine is undesirable because it produces tachycardia, increases the cardiac burden, and aggravates myocardial irritability. Jackson found that the use of pentobarbital as preoperative medication resulted in a decrease in pulse rate of 11.5% during anesthesia in a group of children under the age of seven years, presumably due to the absence of fear.¹³ In a children's hospital, where a permanent staff of specially-trained nurses can be taught the exact details of the preparation of minute doses of these potent drugs, the use of an opiate or a barbiturate for almost every child before operation is highly desirable.¹⁴ In a general hospital, however, problems of shifting personnel and movements of large groups of student nurses into and out of the children's division at frequent intervals introduce many opportunities for dangerous errors in dosage; when such circumstances exist, it may be safer to avoid the use of barbiturates for children under the age of five years, and to limit the use of opiates to adults and to children of ten years or older.

Derivatives of barbituric acid, and particularly opiates are respiratory depressants by virtue of their effects on the central nervous system. Morphine, Demerol, and some of the newer analgesics such as Nisentil and Dromoran should be employed with caution in elderly patients, especially in the presence of diabetes, which seems to potentiate their depressant action. Morphine should be omitted entirely when the patient's vital capacity is reduced by severe kyphoscoliosis, for it has been observed that these

people tolerate morphine very poorly.^{15, 16} Even the use of Demerol in such a situation may be extremely hazardous; we have seen one such patient die from respiratory insufficiency following an abdominal operation and post-operative medication with Demerol. Other conditions which contraindicate the preoperative use of opiates are certain tumors, infections, or injuries involving the brain; central nervous system depression from any cause; and known idiosyncrasy to derivatives of opium. Addiction does not contraindicate their use, but the dosage should be selected cautiously. On two occasions in my experience addicts have been inadvertently narcotized by administration of doses of morphine equal to the doses they claimed to have been requiring habitually; this is probably accounted for by the fact that much of the morphine available to addicts has been diluted with powdered milk sugar by illicit venders, and sold as the pure drug. Consequently, while the addict believes he is taking a certain dose, he is actually taking considerably less.

The belladonna group of alkaloids plays a very important role in the preoperative protection of patients. Many of the untoward reflexes resulting from stimulation of somatic and sympathetic afferent nerves of the skin, joints, periosteum, or viscera are mediated through the efferent activity of the vagus nerves. The end result of vagal overactivity may be laryngeal or bronchial spasm with asphyxia, irregularity of cardiac rhythm, bradycardia, hypotension, or even cardiac arrest. Drugs of the belladonna group decrease vagal activity by their depressant action on the parasympathetic nervous system, and thereby reduce the incidence of these complications during operation. Atropine is more effective in this respect than scopolamine; both drugs are valuable in the reduction of tracheobronchial and salivary secretions during anesthesia and operation.

In a discussion such as this it is possible to mention but a few of the more important preoperative measures which help to protect the patient. Generally speaking, protection of the patient depends upon the anesthesiologist's and surgeon's awareness of all the possible conditions which may lead to complications during anesthesia and operation, and upon their willingness to apply their clinical and scientific knowledge to overcoming those conditions, before such complications are allowed to develop. An ounce of prevention is truly worth a pound of cure.

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THE IMMEDIATE COMPLICATIONS OF SPINAL ANESTHESIA*

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Although sudden death from spinal anesthesia is infrequent and almost always preventable, unexpected accidents tend to bring discredit upon this valuable method of anesthesia. A catastrophe often leaves both surgeon and anesthetist at a loss for an adequate explanation for the accident. It is hoped that this discussion will clarify some of the abnormal physiologic mechanisms and treatment of the possible untoward reactions with spinal anesthesia to avert a fatal outcome.

Certain general statements concerning the use of spinal anesthesia may be of value. Use of the method in improper cases, inadequate familiarity with the technic, failure to recognize warning signs of untoward reactions quickly, and improper or inadequate treatment of the accidents may bring serious damage or even death to the patient. Dehydrated, debilitated, toxic, poor risk patients who may be considered unable to survive a general anesthetic are definitely not suitable candidates for spinal anesthesia. Routinizing the method for specific surgical procedures is certain to lead to fatalities. In election of this method, the general condition of the patient is the limiting factor—not the operation to be performed. The anesthetist must be familiar with the agents and technic of spinal anesthesia. He must be alert to recognize warning signs of impending accidents and must be capable of instituting appropriate treatment at once. Lack of vigilance for even a few moments may lead to irreversible patient damage. There must be forethought in being ready for complications. Oxygen, suction,

fluids and plasma, analeptics and equipment for resuscitation should be readily available.

There are several types of abnormal reactions which one must understand to avoid possible damage or even death from spinal anesthesia. The common types of accidents are as follows:

- 1) Uncontrolled spread of the anesthetic solution.
- 2) Immediate peripheral circulatory failure with resultant cerebral and medullary hypoxia.
- 3) Intravascular injection.
- 4) Drug sensitivity.
- 5) Action of the drug directly upon the medullary centers.
- 6) Reactions which may or may not be associated with or be secondary to the method.

UNCONTROLLED SPREAD OF THE ANESTHETIC DRUG

Although heretofore most deaths have been ascribed to unexpected cephalad spread of the anesthetic agent,¹ this danger has been so often emphasized that most physicians studiously avoid this accident if possible. Such spread is most liable to occur in patients with increased intra-abdominal pressure as from coughing, retching, pregnancy, ascites, obesity or large intra-abdominal tumors. Fractional spinal or intra-tracheal inhalation methods may often be preferable for abdominal surgery when intra-abdominal pressure is greatly increased. Ascending paralysis of the intercostal and finally the phrenic nerve roots causes cessation of respiration. Respiratory arrest may be sudden but usually, if the patient is not heavily narcotized, he will give some warning that the drug has spread to the cervical region. He may state that he

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is entirely numb, that his hands prickle or that it is hard to breathe. Pinching the skin will demonstrate the dangerous level of analgesia. Inadequate respiratory exchange is manifested by diminished or absent thoracic excursions and by cyanosis. Accessory respiration or "tracheal tug" may be seen. The tongue may be numb, the voice weak and hoarse or the speech slurred.

Proper therapy must be instituted at once lest death follow within a few minutes. A clear airway must be established. Oxygen inhalation and, if necessary, artificial respiration preferably with an anesthesia apparatus should be started. If the blood pressure and peripheral circulation are satisfactory, it is then merely a matter of waiting for the level of motor paralysis to recede. Respiratory stimulants are valueless in the presence of the high motor paralysis.

IMMEDIATE PERIPHERAL CIRCULATORY FAILURE WITH RESULTANT CEREBRAL AND MEDULLARY HYPOXIA

This is perhaps the most common mechanism for death with spinal anesthesia. Although this reaction is most frequent with high spinal anesthesia, high levels are not essential as a basis for it. It is most likely the mechanism responsible for death in the case where the anesthetist turns the patient supine after injection and suddenly notices that the patient is in extremis. It has been proven that sympathetic vasomotor fibers are very quickly anesthetized,^{2, 3} and

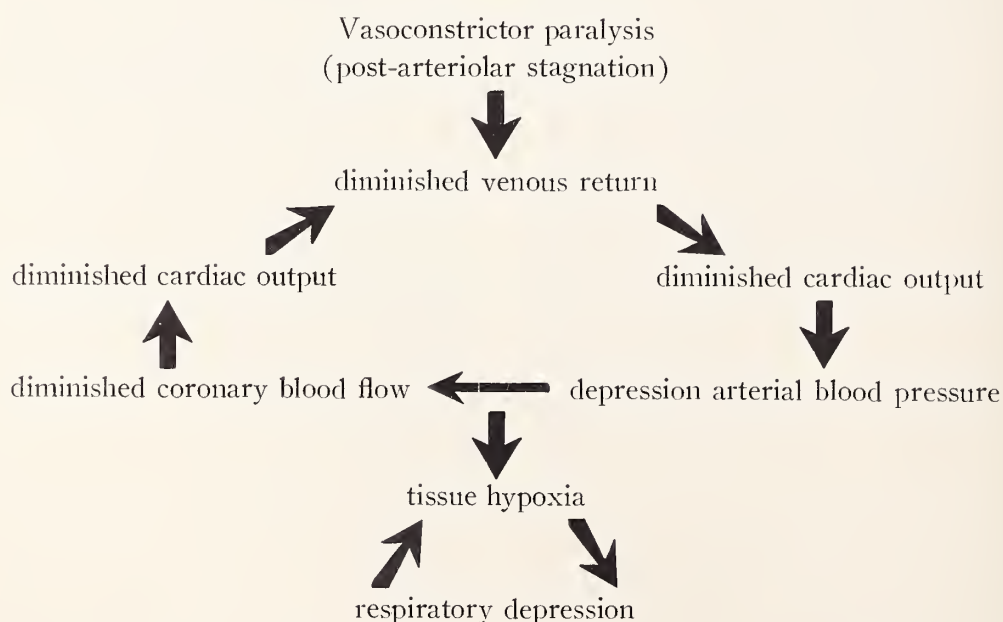
circulatory collapse may follow abruptly after the administration.

A moderate fall in blood pressure often accompanies the use of this method and it occasions no alarm in the healthy patient. Severe hypotension is dangerous. It is especially liable to occur in elderly, toxic or debilitated patients. Dehydration, chemical imbalance, anemia, hemorrhage, acute or "chronic" shock invites hazardous blood pressure levels with spinal anesthesia. Patients with extreme hypertension or hypotension from disease may show startling pressure depressions.

Severe hypotension brings the danger of insidious hypoxic cerebral changes, unconsciousness and perhaps death. Treatment is imperative. Vasopressor drugs such as ephedrine, desoxyephedrine or neosynephrine are usually injected intramuscularly before intrathecal injection to help combat serious pressure falls, but these agents cannot be relied upon to prevent it in all cases.

Hypotension from subarachnoid block has been the subject of much speculation and experimentation. It appears to be due primarily to paralysis of the segmental sympathetic vasoconstrictor fibers in the anterior nerve roots. This paralysis results in increased capacity of the vascular bed and diminished peripheral resistance.⁴⁻⁶ A vicious cycle (Fig. I) of decreasing circulatory efficiency and increasing hypoxia is established in the cardiovascular system.⁷

Fig. I



Cycle of events during spinal anesthesia which may lead to peripheral circulatory failure with cerebral and medullary hypoxia.

Vasodilatation with stagnation of blood in the post-arteriolar bed^{8,9} causes poor venous return with resultant lowered cardiac output. The latter causes depression of the respiratory and vasomotor centers due to hypoxia. Hypotension produces a decreased coronary blood flow and this further reduces cardiac output. The sympathetic vasoconstrictor paralysis in the anesthetized area reduces the efficacy of the emergency vasomotor reflexes initiated by stimulation of the pressor receptors of the carotid and aortic sinuses. The respiratory center is reflexly stimulated by impulses from these pressor receptors and from the chemoreceptors of the carotid and aortic bodies. The chemoreceptors are activated by hypoxia. Thus, respirations may be stimulated, then depressed and finally cease from central respiratory failure. Cerebral hypoxia brings unconsciousness and finally death.

Several warning signs may indicate the onset of this type of reaction. A talkative patient may become quiet and unresponsive. He may yawn and appear very sleepy. The face often becomes expressionless and fixed in feature. Some patients become nauseated and vomit or complain of extreme weakness. Profuse sweating about the head and upper extremities occurs. The individual may be restless and irrational. Pallid cyanosis heralds the failure of the peripheral circulation. Vigorous treatment is necessary and is aimed at breaking the cycle of increasing cerebral and medullary hypoxia. This consists of administration of oxygen, artificial respiration if required, intravenous fluids and intravenous vasopressor drugs such as desoxyephedrine 5-7 mg., neosynephrine 1-2 mg., or ephedrine 10-25 mg. Elevation of the legs to right angles with the body is often of benefit (autotransfusion).

INTRAVASCULAR INJECTION

Intravascular injection is probably very rare. It is difficult to imagine how this accident could happen if proper technic is employed. In this type of accident, the anesthetic solution may be injected into one of the veins of the internal vertebral plexus. Whenever bloody cerebrospinal fluid is aspirated through the spinal needle, the needle must be readjusted to obtain clear fluid. As the injection is made, occasional aspiration will confirm the proper placement of the needle tip.

Reactions from rapid intravenous injection may be of two types, namely, the neurologic type and the circulatory type.

1) Neurologic:

The cerebral stimulation caused by local anesthetic drugs is manifested by talkativeness, excitement, twitchings and convulsions. Treatment with oxygen inhalation, slowly intravenous administration of a

short-acting barbiturate such as pentothal will control the reaction. Artificial respiration may be required.

2) Circulatory:

Hypotension, pallor, sweating, nausea, vomiting, and air hunger characterize this type of reaction. Treatment consists of oxygen administration, intravenous analeptics such as epinephrine or ephedrine and intravenous fluids. Artificial respiration may be necessary.

DRUG SENSITIVITY

Idiosyncrasy to drugs used in spinal anesthesia is extremely rare. The sensations of faintness, palpitation, dyspnea, tremors and nervousness during local anesthesia are commonly caused by the vasoconstrictor drug in the solution. This reaction is most frequently due to epinephrine. If a patient has had an unpleasant experience with local anesthesia at a previous operation, it may be judicious to test the proposed spinal anesthetic agent intracutaneously preoperatively. A control wheal of physiologic saline is made on the forearm and one of 1% procaine solution (or dilute solution the intended drug) is made nearby. Increased redness about the test wheal after five to ten minutes indicates some sensitivity. Another type of drug such as metycaine or monocaine may be tested and will usually prove satisfactory.

ACTION OF THE DRUG DIRECTLY UPON THE MEDULLARY CENTERS

Respiratory and vasomotor failure due to direct action of the anesthetic agent upon the medullary centers has been blamed for untoward reactions. There is little evidence for this belief since Koster¹⁰ proved that extremely high concentrations of anesthetic drugs must be applied directly to these centers to bring about paralysis in animals.

REACTIONS WHICH MAY OR MAY NOT BE ASSOCIATED WITH OR BE SECONDARY TO THE METHOD

Sudden deaths during spinal anesthesia may have nothing to do with the method and may be merely coincidental. A similar reaction may occur with other methods or even without surgical or anesthetic intervention. Unfortunately there is too little time during operating room accidents to determine exactly what has happened in many cases. The value of post-mortem study is confirmed in many of these disasters.

Pulmonary emboli may be precipitated by the acutely flexed position employed in the administration of spinal anesthesia. It is quite possible that the sudden dilatation of the veins of the pelvis or lower extremities from the vasoconstrictor paralysis during this anesthesia might free a thrombus.

Cerebral thrombosis may come on during or just after spinal anesthesia. Hypotension as a result of the method, operative position or reflexes may enhance the possibility of this accident in elderly, arteriosclerotic individuals by slowing the cerebral blood flow. The maintenance of an adequate blood pressure will help insure sufficient cerebral circulation.

Coronary occlusion and/or ventricular fibrillation may occur during spinal anesthesia or operation. A precipitous hypotension may lead to myocardial ischemia since the coronary blood flow depends primarily upon the diastolic blood pressure. Various irregularities in rhythm may ensue.

Slow flow and low pressure may predispose to coronary thrombosis. Reflexes from the operative field, especially in the upper abdomen, may induce coronary constriction and increase myocardial ischemia. Ischemia may cause heart failure if there is coronary sclerosis or pre-existent myocardial damage.

SUMMARY

Some of the more common sudden accidents which may occur with spinal anesthesia have been considered from the point of view of their prevention, recognition and treatment. The pathologic physiology of these reactions has been discussed.

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CANCER OF THE MOUTH

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Those of you who have been so unfortunate as to have had patients with large, bulky, necrotic, foul-smelling mouth cancers, patients unable to swallow either food or saliva, patients unable to open their mouths because of marked trismus and pain, patients with ulcerative cancer breaking through the cheek, with external fistulae, with large masses of broken down cervical metastases will certainly agree that there is no more miserable death than that caused by uncontrolled cancer of the mouth.

I shall limit this discussion to malignant tumors of the hard and soft palate, buccal mucosa, alveolar ridges, tongue, floor of the mouth, and tonsils. I have excluded cancer of the lip as the diagnosis and treatment of this disease has been well standardized for many years. I have also chosen to exclude malignancies of the epiglottis, larynx, hypopharynx, nasopharynx, and sinuses, even though the management of these tumors is similar to that of cancer of the mouth.

Fourteen per cent of all cancer deaths in the United States are due to malignancies of the head and neck.

Nine per cent are due to mouth cancer. Males are afflicted four times more frequently than females. The older age group is of course more frequently affected, but all too often a lesion is misdiagnosed because the person is not in the "cancer" age. Although the etiological agents in the development of mouth cancer are not known, several associated and predisposing factors should be mentioned — trauma from ragged, sharp teeth and malfitting dentures, chemical irritation from tobacco either smoked or chewed, poor oral hygiene, syphilis, preexisting leucoplakia, and hereditary tendency. Since cancer prevention and detection is one of the most important functions of the physician and dentist, they should stress the importance of good oral hygiene and dental care.

Leucoplakia is often a reversible lesion; a clean mouth, abstinence from tobacco, proper diet, and high doses of the vitamin B complex are helpful. Small areas of leucoplakia may be excised; larger areas may occasionally be treated by electro-coagulation or roentgen therapy but the latter should be used with caution.

Good illumination, adequate exposure, intraoral and bimanual palpation, and biopsy, repeated if necessary, are the prerequisites for diagnosis. The neck should be carefully palpated for enlarged nodes. Chronic ulcerations due to syphilis or tuberculosis usually are easily differentiated. Ulcerated or thickened leucoplakia should be viewed with suspicion, watched closely, and biopsied repeatedly if necessary. Pyogenic or foreign body granulomas and traumatic, Vincent's, or aphthous ulcers may be differentiated by their appearance, history, and quick response to simple measures. Unfortunately a lesion may grow asymptotically to a relatively large size. Lack of pain or bleeding, ignorance, and fear are reasons for patient delay. Mouth cancer may be small and infiltrative or large and vegetative, is firm to palpation, and bleeds easily with trauma. If it looks like cancer, or feels like cancer, then it must be considered cancer until definitely proven otherwise. Fortunately medical, dental, and lay educational propaganda has tended to shorten the interval from first symptom to diagnosis.

The most common malignant lesion of the mouth is low grade squamous cell cancer. Large bulky lesions tend to show more cellular differentiation and less anaplasia than smaller more infiltrative lesions. The latter tend to grow more rapidly, invade more deeply and quickly, and metastasize earlier. Adenocarcinoma is much less common, starts in gland structures, is more deeply invasive, and ulcerates late. Scattered throughout the mucosa of the mouth are glands from which benign and malignant mixed tumors may arise. Sarcoma is extremely rare as is malignant melanoma. Lymphosarcoma and leukemia may make their first manifestations in the mouth.

In the treatment of cancer you have but one good chance to cure your patient and that is the first time. Be sure that your choice of therapy is correct. A discussion of the indications, contraindications, advantages, and disadvantages of radiotherapy, electro-surgery, and cold knife surgery follows:

The decision whether or not to use radiotherapy for mouth cancer may be difficult. However, if one is mindful of certain facts, the decision will be facilitated. Any small lesion in the mouth accessible to an intraoral cone, not close to bone, may be treated by deep X-ray therapy with the expectation of a good result. Heavy irradiation of bone will often result in irradiation necrosis and sequestration. The smaller the lesion the shorter and more concentrated the course of X-ray need be. A large mouth cancer requires a relatively long period of treatment, followed by an interval of discomfort from mucous membrane and skin reaction. Although cosmetic result, operative risk, expense, and fear of surgery are four factors which may seem very important to a patient, these alone should not sway the judgment of the

physician as to choice of therapy. In general, radium has not worked well in oral malignancy and should not be used. It is now universally felt that metastatic nodes in the neck are not curable by X-ray, because it is impossible to give a cancer lethal dose of irradiation to such a large area. Recurrent nodes following neck dissection may be spotted with a cone and many times cured. Radon seeds may be used for recurrences following surgery and in conjunction with deep X-ray therapy in surgically inaccessible or inoperable lesions. Deep X-ray therapy is generally considered the treatment of choice in tumors of the tonsil and base of the tongue. The results of the unfortunate and ill advised choice of deep X-ray or radium treatment for malignancies of the mouth that do not meet the requirements mentioned above are all too often seen. An uncontrolled lesion complicated by trismus, pain, slough, infection, and radionecrosis and sequestration of bone often follows. Adequate surgery is then either hampered or made impossible by the complications listed above, by dense avascular scar tissue, and delayed wound healing. However, if roentgen therapy is to be used, a cancer lethal dose in the hope and expectation of a cure should be given. Inadequate or "palliative" dosage is worse than none at all. In late hopelessly advanced cancer, smaller dosage may shrink the lesion to some extent and give the patient a few weeks of temporary symptomatic improvement. If one has followed a number of patients suffering with oral neoplasms for any extended period of time, he soon comes to the conclusion that radiotherapy is not the whole answer to the problem.

Electrocoagulation and electrodessication of malignancies of the mouth: It has been stated, but to my mind in no way proved, that removal of a malignant lesion with a cautery knife, followed by extensive electrodessication of the base, seals off lymphatics preventing local spread and regional lymphatic and generalized hematogenous metastases. The mechanism of healing following electrosurgery is slough of the dessicated tissue followed by granulation, scar tissue formation, and finally epithelialization. This is a time consuming process in a clean wound, but in an obviously infected place like the mouth it is pitifully slow and painfully disagreeable. Electrocoagulation down to what one thinks is normal tissue without benefit of histological verification seems wholly unsatisfactory. The microscopic determination of tumor margin of a lesion excised with a cautery knife is difficult. Sequestration and even osteomyelitis may result from overenergetic electrocoagulation of bony structures. It is occasionally necessary to coagulate tumor tissue which has involved vital or surgically irremovable structures. In these cases it may be used in conjunction with roentgen therapy. When operating, electrodessication of the many bleeders in exten-

sive head and neck surgery is a great time saver. Persistent bleeding from bone may easily be controlled with the ball tip. Superficial dessication of a malignant tumor is to be as strongly condemned as are caustics, pastes, and other "cancer cures."

Many patients previously thought hopeless are now salvaged because of antibiotics, improved anesthesia, adequate blood replacement, and new and improved surgical techniques. Hayes Martin of New York, Grantley Taylor of Boston, and Ward and Hendrick of Baltimore are among those who have developed these new procedures. Although extensive surgery for the irradiation of oral neoplasms has been developed only recently, the statistics of these large centers conclusively prove that such surgery is justifiable. The operability of any given lesion depends upon the courage, training, and skill of the individual surgeon. Practically speaking, there are no medical contraindications to cancer surgery. The cancer *will* kill the patient. Adequate preparation, good anesthesia, and proper post-operative care should take care of most medical contraindications. Age should be no deterrent as life expectancy at any given age is such a variable.

Although standardized techniques can be written for textbooks, the procedure for each individual case must depend upon existing circumstance. The operation should be made to fit the tumor; the tumor should not be made to fit the operation. It should be excised with an adequate margin of healthy tissue in such a manner that no knife, scissor, or other instrument enter the tumor itself. When metastases are present they should be excised en bloc with the primary tumor and intervening lymphatics.

Although bone resection is indicated in nearly all malignant lesions of the hard palate, some small cancers may occasionally be removed down to bone because of the slow rate of growth and the ease of followup examinations. However, the tumor margin is very narrow, if existent at all, and recurrence is not unusual. If there is any question as to the adequacy of excision or the dependability of the patient to return for followup examination, the full thickness of the hard palate should be sacrificed. If it is a central lesion, an intraoral resection is feasible. If there is involvement of the superior alveolus, superior gingivo-buccal sulcus, or buccal mucosa, then a Weber-Ferguson, face-splitting incision should be done; and the lower half of the maxilla resected. If this is necessary, a split thickness skin graft should be used to line the edges of the defect; otherwise, a contracting, scarring, crusting cavity will result. The exposed interior of the nose and antrum may easily be covered with an upper plate type of dental prosthesis. Although some centrally located cancers of the soft palate may be removed surgically, lateral lesions and those extending back into the nasopharynx about the

orifice of the Eustachian tube are better handled by deep X-ray therapy.

Cancer of the buccal mucosa is almost invariably preceded by or associated with leucoplakia. It may be treated by a wide and deep excision closed primarily, by shifting mucous membrane flaps, or by an epithelial inlay graft. Very frequently a tumor, either as such or as an extension of leucoplakia, involves the upper or lower alveolus. If it be leucoplakia, it may be stripped; but if it be cancer, bone must be removed. If there are metastatic nodes in the neck from either palate or buccal mucosa, a radical neck dissection should be done after the primary lesion has been irradiated.

Cancer of the inferior alveolus or gingiva is one of the most common malignant lesions of the mouth. In the past the outlook for such patients was almost universally bad. Deep X-ray and radium rarely cured the lesion and often caused severe pain, trismus, slough and radio-necrosis of the mandible. These patients were miserable. Radiotherapy should never be used for such a tumor. Even palliative radiation is rarely a kindness. A mandibular resection by an external approach is always indicated. It is a common belief that the loss of continuity of the mandible is a terrible cosmetic and functional disfigurement. As long as the resection does not cross the midline, swallowing, speech, and appearance remain good. Small midline lesions may be safely removed by doing a marginal mandibular resection leaving only enough bridge for support. Larger, more infiltrative tumors require complete anterior mandibular resection. Later, a bone graft may help function and appearance. However, removal of the entire anterior portion of the jawbone from one angle to the other is not incompatible with coherent speech and deglutition. Tumors of the midportion of the mandible require removal of the horizontal ramus on the affected side. If the lesion is small and if the entire ascending ramus can be left, the use of a bone graft may occasionally be possible. More extensive lesions involving the ascending ramus or retromolar trigone require complete hemiresection. The contents of the pterygoid fossa may be removed if necessary. In all cases a wide excision including muscular attachments and the contents of the submaxillary triangle should be done. Periosteum should not be stripped from the mandible as lymphatics from the mouth to the nodes in the neck have been histologically proved to run through it. More often than not, either the gingivo-buccal sulcus and buccal mucosa, or the floor of the mouth, side of tongue, and tonsillar pillar are involved; thereby requiring a wider excision. If there are involved nodes in the neck, these should be removed by a radical neck dissection in continuity with the primary lesion. Get the tumor out and worry about the closure afterwards! An amazing amount

of mucous membrane for epithelial closure can be gained from the floor of the mouth and the side of the tongue. Closure by suturing the cut edge of the tongue to the cut edge of the buccal mucosa can easily be obtained even after an excision of half of the tongue, floor of the mouth, mandible, and portions of the buccal mucosa, anterior tonsillar pillar, and soft palate. Various types of ingenious dental prostheses have been devised to help mastication, fill out the contour of the face, and hold the opposite hemimandible in proper position.

As in the case of malignancies of the alveolus, the further posterior a tongue cancer is located, the less certain is the prognosis, and the more difficult the management. A lesion on the anterior third of the tongue, or smaller lesions more posteriorly located, may be removed by a simple "V" excision with primary closure. The common large cancer on the side of the tongue requires a hemiglossectomy. This may be repaired by simple closure making a long thin tongue, or the tip may be reversed on itself and sutured to the most posterior portion of the wound. Excision may be carried as far posteriorly as the valecula, but more commonly only as far as the foramen cecum. There is some difference of opinion as to the treatment of choice of cancers of the base of the tongue. The results of deep X-ray with or without supplemental implantation of radon seeds and surgery are about the same, and an individual decision should be made on any given case. If a cancer of the tongue has extended to involve the floor of the mouth and alveolus, it should be excised en bloc with the involved section of the mandible. If it involves only the floor of the mouth, then the mandible may be split in the midline, and the involved portion of the tongue, floor of the mouth, and contents of the submaxillary triangle removed. The mandible is then wired back together, and the skin and mucous membrane incisions closed. A somewhat similar "pull through" operation without cutting the mandible may be used, but exposure is poor. If there are involved nodes in the neck, they may be excised in continuity with the tongue lesion. A person may eat and talk, albeit not very well, following a total glossectomy, resection of all the mandible between the angles and bilateral neck dissection.

Cancers of the lateral position of the floor of the mouth are handled very much like those of the tongue and alveolus. A malignancy involving the region of the frenulum under the free anterior border of the tongue may be excised widely with primary closure. Wharton's ducts may be disregarded as they will recannulize by themselves. If there is question of tumor margin, or if there is actual involvement of the anterior bridge of the mandible, a marginal or complete anterior mandibular resection in continuity with the lesion of the floor of the mouth may be done.

Although squamous cell cancer is the most common tonsillar malignancy, transitional cell carcinoma and lymphosarcoma are not unusual. Tumors of the tonsil are apt to be anaplastic and metastasize early. Rarely is a tumor seen before it has overgrown the tonsillar pillars. Even then treatment by tonsillectomy has all too often been followed by local and metastatic recurrence. Radical surgery—removal of the tonsil with portions of the palate, base of tongue, lateral wall of the pharynx, portion of the mandible, and radical neck dissection—has given no better results than deep X-ray therapy which is almost universally thought to be the treatment of choice for the primary lesion. If nodes persist or develop after the original tumor has been destroyed by irradiation, a radical neck dissection should be done.

It is generally felt that prophylactic radical neck dissection for malignancies of the mouth is not indicated. If cervical metastases develop later, they soon may be detected by careful and frequent follow-up visits, and operated upon as soon as a diagnosis is made. Aspiration biopsy or frozen section at the time of definitive surgery should replace routine surgical biopsy because of the danger of dissemination of cancer cells. If a previous biopsy has been done, an ellipse of skin containing the scar should be removed in continuity with the specimen. Partial, regional, upper, submental, or supraomohyoid neck dissection should never be done. If there is a definite indication for a radical neck dissection, then all the tissue from the midline to the anterior border of the trapezius, from the clavicle to the base of the skull, down to the scalene muscles should be removed, leaving only the common and internal carotid arteries and the vagus, phrenic, and cervical sympathetic nerves. The spinal accessory nerve should be routinely sacrificed because of its close proximity to frequently involved nodes. The mortality of bilateral radical neck dissection with the removal of both internal jugular veins in one sitting is less than five per cent.

Endotracheal anesthesia with a pharyngeal pack insures an adequate supply of oxygen and prevents contamination of the tracheobronchial tree by aspirated blood, secretions, and vomitus. An elective tracheotomy should be done following all mandibular resections, all radical neck dissections which have been preceded by irradiation, and any procedure following which there would be the slightest doubt that an adequate airway would be maintained during the immediate postoperative period.

Blood replacement, adequate intravenous fluid, and large doses of antibiotics greatly benefit the early postoperative course of the patient. Well balanced tube feedings should be started on the first postoperative day and continued until the patient can swallow satisfactorily by mouth. These patients

should get out of bed on the first postoperative day. If a great deal of care is not given the mouth, a dirty infected intraoral wound will soon result. The mouth and especially the suture lines should be vigorously sprayed with saline every hour or two during the early postoperative days. The mouth should be suctioned carefully as often as necessary. The lips should be kept clean and greased to prevent drying, crusting and cracking. The use of frequently changed packs saturated with a solution of activated zinc peroxide powder keeps the mouth and suture lines very clean because of the liberation of oxygen. Good nursing care is of the utmost importance.

The following cases were operated on in the Maine General Hospital during the fall and winter of 1951-1952:

E. N., 74-year-old man.

A small superficial squamous cell cancer, grade 1, was located on the under surface of the lateral border of the tongue in its middle third. It is of interest that his presenting complaint was earache—referred pain from his tongue. He was digitalized prior to surgery because of mild cardiac decompensation and auricular fibrillation. The tumor was widely excised with primary closure.

J. O., 60-year-old man.

A fairly large infiltrative squamous cell cancer, grade 1, was located on the lateral border of the middle third of the tongue. The diagnosis had been made one year ago at which time he refused surgery, and was treated by electrocoagulation of the lesion. A hemiglossectomy was done and repaired by reversing the anterior tip of the tongue on itself, suturing the tip posteriorly.

J. J., 83-year-old woman.

A tremendous squamous cell cancer, grade 1, completely replaced one-half of the tongue and involved a portion of the floor of the mouth. No nodes were palpable in the neck. Previously she had refused treatment of any sort, but was finally forced to seek help because of severe pain, bleeding, and marked difficulty in talking and eating. She also had polycythemia vera with an admission hemoglobin of 145% and 7,900,000 rbc. She was bled down to 100% hemoglobin and operated upon. An external approach was used. The lip and mandible were split in the midline. One-half of the tongue, the floor of the mouth and the contents of the submaxillary triangle were removed en bloc. The tip of the tongue was sutured posteriorly, the mandible wired, and the mucous membrane and skin incisions closed. The post operative course and wound healing were uneventful. I believe that she has had an excellent result considering the size of the original lesion and the

medical contraindications. She eats and talks much better than prior to surgery.

C. G., 60-year-old woman.

An extensive lesion, partly squamous cell cancer, grade 1, and partly leucoplakia, involved the buccal mucosa, inferior alveolar ridge, floor of the mouth, side of the tongue, retromolar trigone, and anterior tonsillar pillar. She had severe pain, occasional bleeding, and difficulty in eating. The lesion had previously been treated by electrodesiccation and X-ray without improvement. The lip was split in the midline and the soft tissues of the chin and cheek were laid back for exposure. The lesion was then widely excised and repaired by suturing the cut edge of the buccal mucosa to the cut edge of the tongue. She eats and talks normally and is pleased with her result.

R. P., 75-year-old woman.

There were two separate tumors. One was a large squamous cell cancer, grade 1, of the left commissure of the lip. This extended partly as cancer and partly as leucoplakia onto the buccal mucosa up to and including the orifice of Stenson's duct, back to and including the anterior tonsillar pillar, and down over the inferior alveolus and floor of the mouth. This lesion had been treated four and one-half years previously by radium, electrodesiccation, and caustics with only temporary result. A second lesion, also part cancer and part leucoplakia, involved the right hard palate, superior alveolus, and buccal mucosa. This tumor had not been previously diagnosed. Severe pain and bleeding finally brought this rather weak, arteriosclerotic, elderly lady to the Maine General Hospital Tumor Clinic to seek relief. Despite the extent of the lesion and the poor operative risk, radical surgery offered her the only real hope. The lower one-half of the right maxilla was resected by a Weber-Ferguson approach, and the defect lined with a split-thickness skin graft. The other lesion was widely excised and repaired by swinging both mucous membrane and full-thickness cheek flaps to gain closure. An elective tracheotomy was done. An upper plate type of dental prosthesis was made to close the defect into the nose and antrum. She has an excellent functional and cosmetic result, talks, and eats well.

E. D., 75-year-old man.

A large squamous cell cancer, grade 2, involved his left tonsil. There were large cervical metastases in his left neck. The primary lesion had been controlled with deep X-ray therapy, but persistent nodes in the neck required left radical neck dissection.

X. L., 59-year-old man.

The alveolar ridge of the left mandible from the canine tooth to the ascending ramus was involved by

a squamous cell cancer, grade 1. The left hemimandible was resected by an external approach, disarticulating it at the joint. It was repaired by suturing the cut edge of the buccal mucosa to the cut edge of the tongue. An elective tracheotomy was done. The patient was discharged from the hospital on the eighth postoperative day and had baked beans and brown bread at a church supper on the twelfth postoperative day!

J. L., 74-year-old man.

Two years previously a squamous cell cancer of the anterior floor of the mouth and the anterior bridge of the mandible was resected. During a plastic procedure to improve function and appearance and to prevent drooling, recurrent cancer was found diffusely involving the suprahyoid muscles, floor of the mouth, remnant of left mandible, and pterygoid muscles. It was felt that deep X-ray had very little to offer this patient and that a radical removal of the recurrence was his only hope. Therefore, a block of tissue from the hyoid bone to the base of the skull including the remnant of the left mandible and the contents of the pterygoid fossa were removed. An elective tracheotomy was done. He can eat and talk, but is severely disfigured.

The final outcome of these cases will become evident only after long term follow-up. They are presented at this time only to illustrate some of the points mentioned in the paper.

SUMMARY

The diagnosis and treatment of cancer of the mouth has been discussed. The relative merits of and indications for, different types of therapy have been shown. The surgical management of malignancies of various portions of the mouth have been explained. Illustrative case reports have been presented.

CONCLUSIONS

The prognosis of cancer of the mouth has been greatly improved in the past few years because of new operative procedures, improved anesthesia, and antibiotics. Although X-ray is a valuable agent in the treatment of oral malignancy, good results are not obtained when certain contraindications exist. Although the prognosis for early cancer is much better, patients with advanced cancer of the mouth should not be considered hopeless. They should be offered the benefit of radical surgery.

T-BARDRIN: A NEW TREATMENT FOR THE SYMPTOMATIC RELIEF OF ASTHMA*

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The favorable preliminary report on clinical trials in bronchial asthma of T-Bardrin, a combination of sodium ascorbate with other substances which have long been recognized as of value in the symptomatic relief of asthma, seemed to indicate that, despite other published reports to the contrary, sodium ascorbate is of value in the treatment of asthma, provided it is supported by the concomitant use of other anti-asthmatic agents such as vasodilators and sedatives.

T-Bardrin is an encapsulated product, each capsule containing 300 mg. of sodium ascorbate, 195 mg. of theophylline, 8 mg. of sodium pentobarbital, 8 mg. of sodium phenobarbital, and 8 mg. of ephedrine. In addition to the effect of the sodium ascorbate, which is believed to be chiefly on the adrenal, it provides the bronchodilation of theophylline and ephedrine, plus the immediate and delayed sedative effects of the barbiturates. In bronchial asthma, using T-Bardrin as the only medication, *Silbert was able to bring about a significant reduction in the severity and duration of attacks in many of his subjects. In some

cases, there appeared to be temporary remission of the disease; in most of the others, maintenance therapy could be reduced to as little as one capsule per day. Many patients reported a sense of euphoria after being placed on T-Bardrin therapy.

The results obtained in bronchial asthma led the author to undertake the evaluation of T-Bardrin in the treatment of unselected cases of asthma. All of the asthma patients within the author's practice, regardless of the etiology of the disorder, its previous treatment, its duration, or its severity, were utilized in the study. During the clinical trials, all other medication was withdrawn from the subjects.

Eighty-three patients were included in the study and, at the time this is written, there have been no reports from 11 of these, a circumstance that may or may not indicate satisfactory results. Of the remaining 72 subjects, 59 reported varying degrees of symptomatic relief, while 13 reported either no benefit or unfavorable effects. The reports are almost wholly subjective, partly because the therapy has not been continued long enough for more complete clinical

* Medical Times, Vol. 79, No. 6 (June), 1951.

findings, but chiefly because the nature of the symptoms of asthma are such that accurate, objective evaluation of therapy is difficult, if not impossible. In the summaries that follow, therefore, the results of the clinical trials are expressed in the words of the patient, except that if the subject is a young child, the parent's words are quoted. It is realized that from the research point of view, this procedure leaves much to be desired, but it does indicate, in general terms, the results of the study.

Because of the need for economy of space in an article of this type, and because the purpose of the investigation was to determine the usefulness of T-Bardrin as routine therapy in wholly unselected cases of asthma, no attempt has been made to present all of the cases in detail. The 5 cases that follow, however, may be considered typical of the 59 reporting favorable results, in the spread of age groups, in the nature of previous therapy, and in the degrees of benefit experienced.

TABLE I

Case No.	Age and Sex	Date of Onset	Results of Previous Therapy	T-Bardrin Dosage Schedule	Results of T-Bardrin Therapy	Present Need for T-Bardrin
3.	27 F	1948	Various amino-phyllin-ephedrine combinations caused palpitation	One q.i.d., gradually reduced to one daily over 2-week period. None needed after that	Excellent	None. Controlled by desensitization therapy and avoidance regime
10.	5 F	1950	None used	One t.i.d. until allergy regimen controlled symptoms	Excellent	One occasionally, when she contacts one of her sensitizers
23.	7 M	1947	Fair relief from usual symptomatic medications	One t.i.d. only when in an upset	Good	Not taken regularly
37.	14 M	1941	Fair on usual medication	One every 4 hours when in asthmatic paroxysm	Good	Paroxysms usually relieved by several doses
41.	39 F	1945	Good on usual medication, but same residual symptoms	One every 4 hours for relief of attack	Excellent	One capsule usually relieves symptoms in 15-20 minutes

Although not to be considered wholly conclusive, the results obtained in this study seem to indicate that *T-Bardrin is of value in relieving the symptoms of a very high proportion of unselected asthma cases. Not only are the symptoms of asthma mitigated, but the total amount of medication ingested is greatly reduced, thus lessening or even eliminating the medicinal side-effects so distressing in other forms of therapy. This is particularly true with re-

spect to ephedrine since T-Bardrin contains a minimal dose. The reduction in the total intake of medication probably accounts for the sensation of euphoria experienced by most patients after being placed on T-Bardrin therapy.

There remains the problems of determining why some asthmatics are not benefited by T-Bardrin and the development of a means of identifying these persons before the institution of therapy. As his experience in the use of this preparation accumulates, the author hopes that he may be able to shed some light on these problems.

* Material furnished by Angier Chemical Co., Inc., Boston 34, Massachusetts.

TETANUS AND TRACHEOTOMY

H. E. LAWRENCE, M. D., Concord, N. H.

*"In my experience I have never seen such a terrifying disease as tetanus."*¹

Tracheotomy is being recommended in the treatment of tetanus. It is the purpose of this paper to present a case of severe tetanus in which this operation seemed to be life-saving. The literature will be briefly reviewed.

CASE REPORT

August 3, 1950, 24 days before admission, the patient, a five-year-old boy, was vaccinated; the vaccination was not covered. The crust was knocked off two or three times and on each occasion a new one formed. The patient was thought to have had three injections of tetanus and diphtheria toxoids combined with whooping cough vaccine in 1946. No boosters had been given.

August 10th, 17 days before admission, the boy cut his foot while swimming in a river suspected of being polluted by a piggery. First aid was given by the family and the cut healed uneventfully. Numerous small scratches about the legs and feet throughout the summer had occasioned no interest.

On the day before admission, after returning from a fishing trip on which he had been using a hand line over the gunwale of a boat, the patient complained of pain in the right shoulder. This was thought to be due to muscular fatigue. He slept well that night and on the following morning, the day of admission, ate a good breakfast. However, during the forenoon he went to sleep while riding in the car, something most unusual. That noon he ate very little and in the afternoon did not play but lay down. At 5.30 P. M., August 27th, the day of admission, he began to complain of pain in the neck. When seen at home at 6.00 P. M., the neck was painful but not stiff; it could be completely flexed. The back was mobile. There was no stiffness in the legs. Straight leg raising was easily carried out. The reflexes were physiological. There was no fever.

The patient was considered to be possibly in the early stages of poliomyelitis but no definite diagnosis could be made. He was seen again at home six hours later and on this occasion was complaining of severe pain in the abdomen. He had become completely opisthotonic and the abdominal muscles were rigid. He was hospitalized with a preliminary diagnosis of poliomyelitis.

The boy had been entirely well during recent months. He had had a normal birth and development,

and had had chicken pox, measles and mumps, without complications. His father and mother and only sibling were well.

On admission to the hospital the patient presented himself as a fairly well developed and nourished five-year-old boy lying in bed on his back. He was alert and communicative and complained of pain in the abdomen and neck. There was abduction of the thighs. When turned upon his side rigidity was such that he was painfully suspended on the shoulder and the heel with the hips elevated above the bed. The arms were flexed at the elbows. He showed no trismus on admission but this developed within twelve hours. The head showed no irregularities, exostoses, or tenderness. Pupils were equal and regular; they reacted to light and accommodation. There was no nystagmus or lid lag. Extra ocular movements were intact. Conjunctivae were of good color; there was no icterus. Ear canals were clear and drums showed normal landmarks. Mouth, throat, and teeth were normal. Thyroid was not palpable. There was no lymphadenopathy. The chest was clear. The heart was not enlarged; there was regular sinus rhythm; sounds were of good quality; no murmurs were heard. Blood pressure was 90/60. Abdominal musculature was completely rigid. The liver and spleen were not enlarged to percussion. Palpation of the abdomen was unsatisfactory. Genitalia were normal. Reflexes were slightly hyperactive but equal; there was no clonus.

Lumbar puncture was done immediately with great difficulty because of the opisthotonos; blood-tinged spinal fluid was obtained. The chemical examination of the spinal fluid was normal and the only cells contained in it were those due to trauma. At this time the diagnosis was changed to tetanus.

Therapy for tetanus was begun immediately. Six hours after admission 0.5 c.c. of Avertin (tribromethanol in amylene hydrate) was given by rectal catheter. This resulted in considerable relaxation. The stoppered catheter was left in place for ease in administering Avertin. Only 50,000 units of tetanus antitoxin could be mustered immediately. After negative skin and conjunctival tests this was given slowly intravenously. Although only limited quantities of tetanus antitoxin were available in our hospital pharmacy, the pharmacies of the city, and the pharmacies of an adjoining city, sufficient amounts were obtained in a neighboring state; within the first 24 hours the patient received 100,000 units of anti-toxin intravenously.

TABLE I

Day	Temperature	Pulse	Respirations	Avertin	Antitoxin	Comment
(Axillary)						
1.	99.4-100	100-116	24-44	1.7 c.c.	110,000	Spasms every 10-15 minutes. Trismus. Opisthotonus. Turned self. Water p.o.
2.	100.2-101	112-140	32-40	2.5 c.c.	170,000	Spasms every 3-10 minutes. Unable to talk. Much bloody mucus in mouth. Endotracheal tube.
3.	99.2-101.2	100-140	40-50	3.7 c.c.	100,000	Spasms every 2-3 minutes. Some lasted 5 minutes. Suction every 3-4 minutes. Cyanosis, apnea, oxygen therapy.
4.	100-101	108-130	36-68	4.3 c.c.	40,000	Spasms last 4 minutes, with 2-3 minutes between. Tracheotomy done at the end of this day.
5.	98.8-100	104-120	36-50	3.4 c.c.	60,000	Some spasms severe and requiring oxygen; some lasted 4 minutes. On the whole spasms seemed fewer and less severe.
6.	98.4-100.4	104-130	40-60	4.1 c.c.	40,000	Spasms slight to moderately severe, lasting 2 minutes. Dyspnea and cyanosis at times. Coughing mucus out of tube voluntarily.
(Rectal)						
7.	99.6-102	96-136	40-64	3.6 c.c.	20,000	Occasional spasm of slight to moderate severity.
8.	98.6-100.2	90-112	36-52	2.0 c.c.	20,000	Slight spasms.
9.	98.2-100.4	96-104	32-60	1.3 c.c.	20,000	
10.	98.6-100	80- 96	30-44	1.9 c.c.		Diarrhea.
11.	99.4-100.4	90-104	32-52	1.4 c.c.		
12.	99.2-99.8	80-100	30-44	0.8 c.c.		
13.	98.6-99.8	80-100	30-40	0.0		

On the second hospital day an endotracheal tube was inserted because of respiratory obstruction. However, there was still difficulty in maintaining the air way, almost constant suction being needed to remove tenacious bloody mucus. It was necessary for a physician to remain in the hospital and to see the patient repeatedly throughout the day and night for supervision of suction by the nurses, for more thorough suction, and for regulation of Avertin dosage.

The patient was needing more and more Avertin. His requirement rose from 1.7 c.c. in the first 24-hour period to 4.3 c.c. in the fourth. He was having severe spasms with marked cyanosis; respirations ceased for periods of several seconds at a time. Consequently a tracheotomy was done* before the close of the fourth hospital day. Thereafter the general condition appeared much improved. His requirement for Avertin dropped steadily. The temperature, pulse, and respiratory rate began to fall. (See Table I) Frequent suction of mucus from the airways was still necessary but was made easier. Removal of secretion

from the nasal passages and mouth was difficult at all times because of trismus and voluntary resistance. Spasms became fewer and milder. On the second day following tracheotomy the patient began of his own accord to cough plugs of mucus out through the tube. On the next day he was unable to tolerate the #2 inner tube because of dyspnea, cyanosis and increase in respiratory rate. It was removed.

Antitoxin was given in large doses; 110,000 units were given the first day, 170,000 the second and 100,000 the third, followed by gradual decrease in the daily dose (see Table I) until the ninth day, when urticaria developed. This was controlled with 20 mgms. of Benadryl intramuscularly every three or four hours.

Fluid, protein, vitamin and electrolyte intake was maintained intravenously as long as the veins were in good condition; later hypodermoclyses were used. One transfusion was given.

After ten days diarrhea began, probably as a result of Avertin, but it was not severe enough so that therapy had to be discontinued. Occasionally doses of

* By Dr. Frank E. Perron, Jr.

Avertin were immediately expelled and were promptly repeated.

After eleven days the tracheotomy tube was stopped part of the time. There were ulcers on the inner aspects of both cheeks and along the margin of the tongue. At this time the grin had become less sardonic, and the extremities were no longer spastic. The back muscles remained tight. On the 12th day the #0 tracheotomy tube with an inner tube was put in place. On the 13th day the patient was entirely coöperative except for resisting oral care. He could not swallow saliva well. He did not require suctioning throughout the night. On the 14th day, the boy himself removed the tracheotomy tube, began to eat, talk, color pictures, and "read" comic books.

The patient was discharged after twenty-five days, with slight residual stiffness of his general bodily musculature but with ability to walk about and live a normal existence.

Culture of the vaccination site did not show *Cl. tetani*.

For the first sixteen days of the illness special nurses were employed continually. 300,000 units of aqueous procaine penicillin, 100,000 units of crystalline penicillin, and 0.5 gms. of streptomycin were given daily until the tracheotomy tube was removed. Oxygen therapy was used when indicated for dyspnea or cyanosis. Defecation and urination occurred spontaneously during muscular spasm.

DIAGNOSIS

The typical symptoms of trismus, dysphagia, stiff neck, generalized rigidity, and convulsions are often not present in the early stages, or may be present to such limited degree as to make diagnosis difficult. In one series of 352 patients,² 26 cases were unrecognized by the physician at the time of the first examination. Twenty-two of these were seen by internes or residents in the emergency or admitting rooms of a charity hospital; four were seen by private physicians. Eight of the twenty-two seen at the teaching hospital were sent home. Three of them had given a history of convulsions. The other five had two or more symptoms such as trismus, stiff neck, muscular rigidity or contractions. Of the four seen by private physicians, one who had complaints of trismus and generalized rigidity was diagnosed as having worms and was sent home. One was having convulsions and was sent home without diagnosis. Two others had speech impairment, trismus and some muscular rigidity.

Of this teaching hospital series fourteen were admitted to the hospital and treated for one to seven days, with various diagnoses other than tetanus, before the proper diagnosis was made and proper therapy instituted. The tentative diagnoses on these four-

teen patients were as follows: deferred, 3; hysteria, 3; meningitis, 3; carcinoma of the esophagus, 1; chronic otitis media and mastoiditis, 1; pneumonia, 1; cellulitis of the face, 1; undiagnosed on autopsy, 1.

PORTAL OF ENTRY

In the above series of patients the list of injuries from which tetanus developed included many insignificant scratches, minor abrasions, or minute puncture wounds. It is pointed out that one cannot expect that prophylaxis be given for every such injury. Nevertheless, patients having puncture wounds, splinters, secondarily infected and suppurating wounds, burns, subdermal lacerations, and infected surgical incisions, particularly in tetanus-prevalent areas, should receive antiserum, toxoid, or both, if indicated.

In 60% of Pratt's cases³ the injury was unknown or of a type that would not have been treated with antitoxin or a booster. Seven of his cases of tetanus followed vaccination. Campbell and Brown⁴ report a case of tetanus in which the portal of entry was the uterus, following induced abortion.

TREATMENT

It is quite generally agreed that the treatment of tetanus should include (1) rapid and effective neutralization of toxin in the blood stream, (2) counteraction of muscle spasm by means of sedation, (3) administration of adequate fluid, electrolytes, calories and vitamins, (4) prevention and treatment of complications and (5) general nursing care. The importance of removing the focus of infection is debatable. Vinnard² and Costello⁵ advise excision of the local lesion. On the other hand, Elmonds and Lavers⁶ and Spaeth⁷ cast doubt upon the value of this procedure. In the opinion of Pratt³ adequate amounts of antitoxin alone prevent the spread of tetanus toxin from its site of elaboration. This is manifested by the efficacy of prophylaxis by means of passive immunization.

1. Neutralization of Toxin.

Although intrathecal serum therapy has been recommended in the past,⁸ more recent literature indicates such treatment is either unnecessary, dangerous or both.^{2,5} Experimentally it appears that tetanus toxin once fixed in the central nervous system is no longer affected by antitoxin.²

Table II shows various doses and routes of administration which have been recommended. One notes that the minimum doses vary from 20,000 units to 200,000 units.^{4,6,8} One has the impression that better results have followed the administration of the larger amounts of serum.^{8,10}

2. Sedation.

Barbiturates, Avertin (tribromethanol in amylenc

TABLE II

Antitoxin Dose

Vinnard ²	50,000-60,000 units in 300 c.c. saline I.V. The same amount I.M. at the same time. If focus not found, much larger doses.
Pratt ³	Not more than 80,000 units.
Campbell and Brown ⁴	200,000 units I.V. followed by 50,000 units I.M. q.d. until the 4th day.
Costello ⁵	50,000 units I.V. initially. Additional 5,000 units daily to maintain blood level.
Elmonds and Lavers ⁶	Initial dose 200,000 units. More if any evidence of continued production of toxin.
Spaeth ⁷	Single I.V. and/or I.M. injection in doses of 20,000-100,000 units.
Vener and Bower ⁸	Minimum 200,000 units in 24-36 hours. In 72 cases in which patients received 200,000-230,000 units mortality rate was 9.7%. Also recommend 20,000 units intracisternally after adequate sedation.
Weinstein and Wesselhoeft ⁹	50,000 units I.V.; 50,000 units I.M.; 10,000-20,000 units s.c. around the wound. 10,000 units q. 24 hours till condition warrants cessation of therapy.
Graham and Scott ¹⁰	1st 3 cases 70,000-80,000 units—all died. Next 7 cases 120,000-180,000 units—all but one lived.

hydrate), ether, paraldehyde, chloral hydrate, and several curare preparations have been used for prevention of convulsions.⁵ Each has its drawbacks. Prolonged curarization introduces many hazards, chiefly respiratory paralysis. Tribromethanol is effective in controlling rigidity and spasm but is accompanied by rectal irritation in about one-third of the cases and by a certain degree of respiratory depression. However, it appears to be highly favored. It is given in 2½% solution in distilled water in doses of from 20-100 mgms. per kilogram of body weight, the dose being repeated as often as needed to control muscle spasm and convulsions. The amylene hydrate solution must be tested with congo red prior to use; if a blue or violet test results the solution must be discarded because of decomposition. The distilled water in which the solution is given must be heated to exactly 40 degrees Centigrade before adding the tribromethanol in amylene hydrate. This solution is given immediately, before cooling. It should be administered under constant expert supervision.

3. *Fluid, vitamin, protein, and electrolyte balance.*

Fluid should be administered intravenously or by hypodermoclysis in the acute severe stages of the illness because of the danger of aspiration if feeding is attempted by mouth or by stomach tube.

4. *Methods to prevent and combat complications.*

A. *Antibiotics:* There are no indications that the antibiotics, penicillin in particular, are effective in the treatment of tetanus other than in the prophylaxis of pneumonia.¹¹ However, because of the importance of

pneumonia it would seem proper to administer both penicillin and streptomycin.

B. *Tracheotomy:* Only in recent years has tracheotomy been widely recommended in the therapy of tetanus. Costello,⁵ Binger and Devnich,¹² and Prior and Smith,¹³ point out that one of the major dangers in tetanus is that of asphyxia and that preparations should be made for prompt tracheotomy, or indeed that prophylactic tracheotomy may lessen the danger of asphyxia. Godman and Adriani¹⁴ state that in all except the mildest forms of tetanus early tracheotomy should be performed to eliminate upper respiratory obstruction and to facilitate sucking out the lower respiratory tract. In many of the cases in which this was done the need for sedation dropped abruptly.

5. *Nursing Care:* "The importance of good nursing care of these patients cannot be overemphasized. The mortality of severe tetanus cases will not be appreciably decreased until each of these patients can be under constant supervision by a specially trained and experienced nurse."²

PROGNOSIS

In a situation in which very little tetanus antitoxin was available for specific treatment, and in which there were many other co-existing conditions and infections, 140 of a group of 156 patients with tetanus died, a mortality rate of almost 90%.¹

In a group of 100 consecutive cases⁸ there were 29 deaths. Twelve died in the first twenty-four hours. Of the 88 who survived longer, 17 died, a net mortality rate of 19%. Of those cases in which the incu-

bation period was six days or less only 23% recovered; otherwise 75 or 80% recovered. In Spaeth's series⁷ approximately 95% of the deaths occurred among the severely ill patients who were hospitalized during the first four days of illness. The mortality rate for his cases since July, 1933, was 35%; 69% of patients with fever died and none died whose temperatures remained normal.

Of the 252 cases reviewed by Vinnard² the total mortality was 45%; excluding the deaths which occurred in the first 36 hours, it was 34%. During the last three years of the series the mortality was reduced to 18%. The greatest mortality was in the group with an incubation period between six and ten days. Of 21 cases reported by Binger and Devnich,¹² between 1935 and 1948, 65% died; four of the ten cases reported by Graham and Scott¹⁰ did not survive.

PROPHYLAXIS

*"It is a wholly preventable disease:—"*¹⁵

From December 7, 1941, to September 2, 1945, a total of eleven cases of tetanus was reported to the office of the Surgeon General.¹ For a five-year period that included the war, 1941 to 1945, there were fourteen cases and five deaths. Of these four, two had had no active immunization and the other two had been immunized but had received no booster after injury. There were no deaths in personnel fully immunized.

Although there was no clinical tetanus among soldiers in the southwest Pacific approximately, 500 cases occurred among civilians in Manila alone. About 40 per 1000 wounded civilians developed tetanus.

Costello⁵ offers the following guide for prophylaxis:

1. Two injections are adequate.
2. The longer the interval between injections the better, 2-3 months being a practical interval.
3. Tetanus toxoid is antigenically better if combined with pertussis, typhoid, etc. It is also better if alum precipitated and best if aluminum hydroxide adsorbed.
4. A booster dose of 1.0 c.c. should be given at the time of injury.
5. If there is doubt as to whether previous tetanus toxoid has been given, it is indicated at the time of injury along with the prophylactic dose of anti-tetanus serum.

CONCLUSIONS

*"Improvement in treatment can be confirmed only by the results obtained in patients with severe infections, — whose infections previously were generally fatal."*³

A case of severe tetanus is presented in which tracheotomy added greatly to the therapeutic program.

The recent literature regarding tetanus is reviewed; apparently the portal of entry, and therapeutic measures directed at its eradication or neutralization are unimportant.

It would appear that the optimum dose of anti-serum is unknown; too much of this expensive drug may have been used on the case reported here. However, the literature suggests that higher doses have yielded better results, and it was felt that the desperate status of this patient justified maximum therapeutic effort.

Physicians and hospitals should see that adequate amounts of antitoxin for therapeutic use are kept on hand at all times.

Although the source of this patient's disease is unknown one suspects the vaccination. Immunity to tetanus is a prerequisite for vaccination.

*"Sir," said he (Samuel Johnson) "there is nothing too little for so little a creature as man. It is by studying little things that we attain the great knowledge of having as little misery and as much happiness as possible."*¹⁶

Drs. J. Dunbar Shields, Angus Brooks, Winifred Sanborn, and Frank Perron, Jr., Joan Kiley, R. N., Dorothy Wells, R. N., Lucille Kidder, R. N., and the writer coöperated in the care of the case reported.

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MEDICAL ASPECTS OF ORGANIC PHOSPHORUS CONTAINING INSECTICIDES*

(Parathion, TEPP, HETP, EPN and others)

While nearly all of the cases of poisoning by the organic phosphorus containing group of insecticides are occupational in origin, the vast majority are treated by general practitioners in the vicinity of the patient's home. Therefore, it is of life-saving importance that all physicians be alert to recognize the condition and institute prompt treatment. The subject is not yet covered in medical texts.

These materials have, since 1948, become of major importance to both agriculturalists and physicians. This group of chemicals is unlike any others in common use in that its members are cholinesterase inhibitors and therefore their symptomatology and treatment is peculiar to this group.

Parathion is diethyl p-nitrophenyl thiophosphate. TEPP is tetraethyl pyrophosphate. HETP is hexaethyl tetraphosphate. EPN is ethyl p-nitrophenyl thionobenzene phosphonate. OMPA is octamethyl pyrophosphoramidate, which has been used in the treatment of myasthenia gravis.³ Several other similar compounds are being used experimentally and will probably soon be in general use. In all of these compounds it is the organic phosphorus containing part of the molecule which is cholinesterase inhibiting. On injection into laboratory animals there are quite marked differences in toxicity of these various compounds, but in practical use all present about the same health hazard. Since the pharmacology, symptoms and treatment are the same for all members of the group they will be discussed simply as organic phosphates. This term, although commonly used, is technically incorrect because some are not phosphates.

While the organic phosphates in pure form are liquids, they are packaged and sold in powder concentrate form of usually 15% or 25% strength. California state regulations require that only complete packages be used in order to avoid the hazard of spillage or evaporation from partly used containers. The regulations also prohibit the sale of amounts small enough for home garden use, thus preventing great numbers of poisoning cases. The concentrate is mixed in the field with either dust or liquid diluent and the mixture applied to crops in strengths not exceeding 2%. Even the dilute mixtures present a serious health hazard unless proper precautions are taken. The organic phosphates hydrolyze and become nontoxic slowly or rapidly, depending on a

number of factors. Under unusual circumstances, cases of poisoning are known to have resulted from working in fields 34 days after spraying. The materials are very frequently used in all areas of the State. Due to their great efficiency they have largely replaced some of the older insecticides.

INCIDENCE OF POISONING

The incidence of organic phosphate poisoning varies with the season. Among agricultural workers, it is low during the winter months and reaches a peak at the height of the spraying season. Among formulators, packagers and distributors, the peak is two or three months earlier. As many as 30 cases have been reported in California in one month. At least one occupational fatality has occurred in California, but none in 1950 or during the first half of 1951.

Cases of poisoning are by no means limited to persons handling organic phosphate materials. Among those in whom poisoning may be suspected are all agricultural (including greenhouse and nursery) workers who have occasion to enter treated areas after application, children playing in treated areas, bee keepers, casual trespassers, occupants of houses in or adjacent to treated areas, travelers passing fields during application, mechanics working on contaminated equipment, and many others.

PHARMACOLOGY AND TOXICOLOGY

The pharmacology and toxicology of the organic phosphates is not completely understood, but sufficient is known to account for most of the symptoms and to rationalize the treatment. The materials are readily absorbed through the intact skin, by inhalation, and by ingestion. They are apparently rapidly broken down by the body and one of the breakdown products is paranitrophenol, which is excreted in the urine.

Very small amounts appear temporarily to inhibit cholinesterase activity, but larger doses either destroy cholinesterase or make it permanently inactive. There is evidently a quantitative relationship between the amount of toxic material absorbed and the amount of cholinesterase destroyed (or inactivated): the destructive effect is initiated almost immediately and completed within a few hours. Except for loss of blood and tissue cholinesterase activity no organic changes have been found on autopsy of fatal cases other than the congestion usually found following death in convulsive states. There is no evidence that

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the small amounts which can be chronically tolerated by man (i.e., do not reduce cholinesterase to symptom-producing levels) cause any symptoms or organic changes. There is no evidence that tolerance can be acquired or that susceptibility increases following repeated exposure. However, it should be emphasized that small exposures repeated before the lost cholinesterase is regenerated will, in time, reduce the activity level to the point at which acute symptoms develop. These materials are not skin irritants nor are they known to be sensitizing agents to any noticeable extent.

Since the function of cholinesterase is to hydrolyze acetylcholine, destruction of the esterase activity in the body allows accumulation of acetylcholine, which is produced by and associated with stimulation of certain nerves, particularly the post ganglionic fibres of the parasympathetic system. The accumulation of acetylcholine results in continuous stimulation of the entire parasympathetic system (muscarine effect). There is also an effect on other portions of the nervous system similar to that of nicotine.

The cholinesterase activity level of red cells and plasma in a particular individual remains quite constant except as lowered by the organic phosphates and severe blood dyscrasias. No other material in commercial use has a similar effect. However, the activity levels vary markedly between individuals, with the result that one individual may have symptoms of poisoning with a blood cell activity level higher than the normal for another. It is evident that there is normally a considerable excess of cholinesterase present in the body over that actually required to destroy the acetylcholine formed. There appears to be a rather sharp individual critical level above which symptoms of poisoning do not occur because repeated small exposures cause no symptoms whatever until a final similar exposure, which may result in severe symptoms. This critical level as measured by red cell activity is considered to be below 50% of the normal for the individual. The plasma cholinesterase activity level falls more rapidly than that of red cells and also returns to normal more rapidly after exposure. It is probable that the red cells give a more accurate estimate of tissue cholinesterase. Cholinesterase, as indicated by red cell levels is regenerated slowly and may take as much as ten weeks or more to return to normal after severe poisoning.

ONSET, SYMPTOMS AND FINDINGS

Since the organic phosphates are rapidly absorbed, react quickly with cholinesterase and promptly disappear, the onset of symptoms follows within a few hours of the last exposure and is not known to have occurred more than 24 hours following exposure. (It should be remembered that exposure may occur

after the end of the work period, particularly from handling contaminated clothing.) Symptoms are known to have appeared within fifteen minutes of an exposure consisting of one strong whiff of concentrated material. Death has followed within two hours after applying a solution as a pediculocide. Onset of symptoms most commonly occurs during or shortly after exposure or during the night when exposure has been in the afternoon.

The symptoms and findings are those of hyperstimulation of the parasympathetic nervous system plus, as previously mentioned, in some cases, those of the excitement stage of nicotine poisoning. Premonitory symptoms of headache, sweating and possibly salivation or lacrimation may precede for about an hour the abrupt onset of any or all of the following symptoms: dim vision, dizziness, nausea, vomiting, diarrhea, incontinence, difficult breathing, fainting, muscular twitching, tonic convulsions, respiratory failure or total collapse.

Findings other than these may include a fixed myosis, asthmatic rales or pulmonary edema. Temperature may be normal or vary slightly in either direction. Contrary to theoretical expectations, the patients usually appear to be in mild shock with rapid pulse and low blood pressure. There is no inflammatory process. With the exception of low cholinesterase activity, blood and urine are normal, consistent with the degree of dehydration present.

Because of the toxicology and pharmacology involved, it does not seem possible that there could be chronic symptoms due to the organic phosphates or that onset of symptoms could be delayed beyond the few hours following exposure during which cholinesterase is destroyed. Continued complaints following exposure to organic phosphates are not uncommon, but they are not apparently of organic origin.

DIAGNOSIS

History of exposure within 24 hours and fixed, contracted pupils coupled with any of the other symptoms in a previously well subject are almost pathognomonic of organic phosphate poisoning. However, contraction of the pupils does not invariably occur, and it may result from the local effect of minute amounts of material in the eye with no other systemic reaction. Headache, only, if it occurs during or shortly after exposure, should be treated with suspicion and watched carefully. Presence of several of the symptoms or findings after exposure is usually sufficient to justify treatment. Victims of organic phosphate poisoning have astonishingly high tolerance for atropine. If large doses do not diminish the symptoms or are not tolerated, some other condition should be suspected. The reverse serves to confirm the diagnosis. Presence of any of the symptoms

among several of a group with recent similar exposure is highly suspicious; in fact, the whole group should be brought under observation if possible. Group poisoning by organic phosphates can usually be differentiated from group food poisoning or poisoning from other chemicals by the presence of contracted pupils among some of the victims. Single cases without history of exposure may be easily confused with food poisoning or poisoning by chemicals which produce pulmonary edema. The condition must also be differentiated from asthma, mushroom poisoning, acute infectious diseases, emotional reactions with hyperadrenalism, cerebrovascular disease and cardiac failure. Due to the time factor, laboratory procedures are useless for establishing a diagnosis prior to beginning treatment. Low blood cholinesterase activity levels are useful in confirming a diagnosis, even if taken several days after the acute episode. The blood does not lose cholinesterase activity to any great extent for several hours after death. Therefore, the taking of postmortem blood samples is useful in unexplained sudden death. Fresh liver, brain or other tissues may yield traces of the organic phosphates. Paranitrophenol may be recovered from the urine for a few hours after exposure, but the procedure is not known to have clinical value.

TREATMENT

Treatment of organic phosphate poisoning is largely symptomatic, but it must be prompt and adequate if life is to be saved. Atropine, by paralyzing the parasympathetic nerve endings, is the physiological antidote for the muscarine effect. It should be given by injection promptly and in large doses. The tolerance for atropine is greatly increased in this condition and doses of 1 mg. (gr. 1/60) to 2 mg. (gr. 1/30) should be given every hour until symptoms are relieved or signs of atropinization appear. Thereafter, smaller doses should be given to control symptoms. Close observation should be continued for 24 hours after the disappearance of symptoms and after the last dose of atropine. This is frequently the only treatment necessary. If the material has been ingested, vomiting should be promptly assured or the stomach washed. Oxygen therapy should be instituted at the first sign of pulmonary edema or respiratory difficulty. Tracheal catheterization may become necessary to remove excess secretion. Postural drainage is useful, especially as a first-aid procedure. If respiratory failure occurs, prolonged artificial respiration is indicated. Animals have completely recovered after several hours of artificial respiration.

Symptoms usually disappear rapidly and completely under treatment. There is no need for bed rest or dietary restriction after disappearance of symptoms. The patient should be reassured that no permanent damage has been done and that he can

do ordinary work without further convalescence. He should be forbidden to risk again exposure to organic phosphates until his blood cell cholinesterase activity approaches his pre-exposure normal or a stationary level. It is important for the patient to understand why he must not expose himself although he feels perfectly well.

If at all possible, cases of organic phosphate poisoning should be hospitalized regardless of how mild the case may appear when first seen, in order to secure close observation and in order to make oxygen therapy available on short notice. If such cases absolutely must be treated on a home or office basis, both the patient and someone able to furnish immediate transportation should be advised of the danger and told to bring the patient immediately to adequate medical care at the first sign of return or increase of any symptoms. This is an emergency situation fraught with grave danger.

Morphine is contraindicated because of its effect on the respiratory system. Other sedatives or hypnotics should be used carefully and only when essential. BAL, sodium thiosulphate, calcium gluconate and other medications often used in some types of chemical poisoning are not indicated in this condition and their use may be damaging.

Dermatosis following exposure to organic phosphates should be treated as a separate entity perhaps due to other materials in the mixture used. The organic phosphates are not irritants nor are they active skin sensitizing agents.

LABORATORY PROCEDURES BLOOD CHOLINESTERASE ACTIVITY

The determination of the cholinesterase activity levels of both red cells and blood plasma is of great value in connection with organic phosphate poisoning, but its chief use is as a preventive measure. It is also used for confirmation of diagnosis and for determining when cholinesterase regeneration is complete after poisoning. There are three techniques for this determination in common use in California. Their results are comparable for clinical use but the reports are in different units requiring conversion before comparison.

The method in most common use is that described by Michel.¹ Results are reported in electrometric units.

The method described by Stedman et al.² gives results in c.c. N/50 NaOH required per c.c. of sample to neutralize the acetic acid produced by the reaction between cholinesterase and acetylcholine.

A third method utilizes the Warburg apparatus, and its results are reported in terms of CO₂ liberated on neutralization of the acetic acid produced by the reaction.

A 10 c.c. venous blood sample will be acceptable for analysis by any of the techniques if prepared as follows: Use dry needle, syringe and tubes. Place blood in a citrated tube and shake thoroughly. Centrifuge as soon as possible and put plasma in a clean tube. Wash and centrifuge red cells three or four times with normal saline solution and leave suspended in about 10 c.c. of saline. To avoid possible confusion, it is well to label the tube with red cells "not accurately diluted." This will warn the laboratory to centrifuge the cells and dilute in accordance with the technique to be used. The samples should be refrigerated prior to and during shipment for best results. Capillary blood may be used to advantage under certain conditions, but prior arrangement should be made with the laboratory before depending upon this type of sample.

Since the activity levels for both red cells and plasma vary widely between individuals it is unrealistic to designate a so-called "normal" level. The range of normal levels is so broad that symptoms may occur in some persons at a level higher than the normal for others. Nevertheless, for the sake of convenience, several workers report results as per cent of average. Their figures are often miscalled as "per cent of normal." Thus reports of over 200% are not uncommon and symptoms of poisoning may occur in some individuals at around 100%. Other workers use the individual pre-exposure levels as normal and report results as a percentage of that figure. Average normal activity levels have been found to be, by the Michel technique, roughly 0.75 Δ pH per hour for red cells and slightly less for plasma. This figure compares to 2.8 c.c. N/50 NaOH by the method of Stedman et al.

In unexposed subjects the plasma and red cell levels are approximately equal, but after exposure the plasma level falls more rapidly than that of the cells. On the other hand, the plasma level rises much more rapidly than that of the cells after termination of exposure. This phenomenon is graphically illustrated in a recent article describing the use of OMPA in the treatment of myasthenia gravis.³ The activity of the red cells probably most closely parallels that of the body tissues. The level of either cells or plasma may be used as a diagnostic and preventive aid, provided this difference in behavior is kept in mind. Serum activity levels are practically identical to those of plasma.

In spite of the present confusion in reporting results and the difficulty in getting pre-exposure levels, blood cholinesterase activity determination serves for the following uses. Since red cell levels practically always fall well below 50% of the individual pre-exposure normal before the onset of symptoms, reports above this figure mitigate against a diagnosis of symptomatic poisoning, while one markedly be-

low is almost pathognomonic. Also, since the normal of nearly all individuals is above 50% of average it follows that a report of plasma below 25% of average is very strongly suggestive of clinical poisoning without reference to the individual normal. Reports between 25% and 80% of average are suspicious and justify further follow-up.

A progressive rise in either red cell or plasma activity indicates that excessive exposure to organic phosphates has occurred and that regeneration is taking place. The plasma activity returns much more rapidly than that of the red cells and may reach a stationary level about three weeks after clinical poisoning. The red cell activity increases gradually and may take as much as ten weeks to reach a stationary (pre-exposure) level, depending somewhat on the severity of the exposure. Patients should be forbidden to risk exposure again until the red cell activity approaches a stationary or normal level.

Perhaps the greatest use for this laboratory procedure is in the prevention of illness or death from exposure to the organic phosphates. Since the fall in blood cholinesterase activity occurs promptly after absorption of the organic phosphates, periodic blood activity level determinations on individuals frequently exposed to these materials will show whether or not the rate of destruction of cholinesterase exceeds the rate of regeneration. A progressively falling level indicates approaching danger. The subject should improve his protective measures or, at an appropriate time, be removed from the risk of exposure until cholinesterase activity has increased to approximately pre-exposure level. Red cell determinations are more accurate than plasma levels for this purpose, but plasma levels may be used successfully if their limitations are kept in mind.

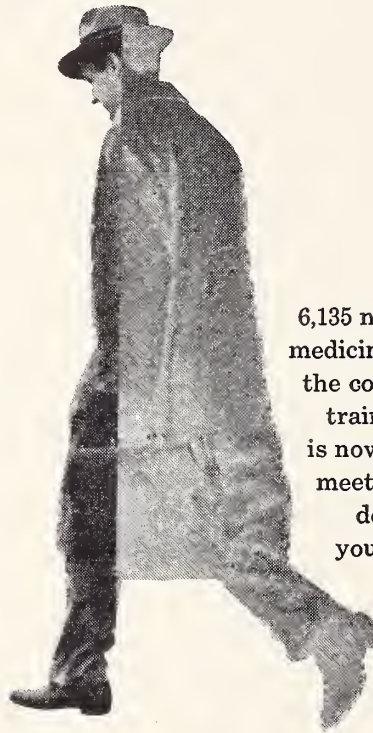
Some industrial physicians responsible for groups of exposed workers have adopted the policy of recommending temporary removal from exposure of workers whose red cell activity falls below 50% of the average level. This is admittedly a compromise due to the difficulty of getting pre-exposure individual levels. It may fail to protect those with unusually high normal levels and it may work an economic hardship on those whose normals are below average, but it does protect the vast majority of workers. The period between determinations should be set by the physician, based on the type and degree of exposure and on other factors.

ORGANIC PHOSPHATE MATERIAL IN TISSUES

Measurable amounts of organic phosphate containing insecticides have been found in early postmortem tissues, especially brain and liver. Negative results do not preclude poisoning by organic phosphates, but positive findings are important in unexplained sudden death where such poisoning is a possibility.

THE PRESIDENT'S PAGE

The goal set by the American Medical Education Foundation for 1952 is around \$2,000,000. General interest of physicians throughout the country has sharpened acutely in these first few months as they become aware of the deficits for operating expense of our seventy-nine four-year medical schools and of the eight two-year schools. Doctors realize that they owe a debt to schools from which they were graduated in medicine since rarely do tuition fees actually compensate the institution for costs incurred. In 1951-1952 the schools estimated that receipts from tuition fees of medical students would total 21.9% of budgets while the previous year the percentage was somewhat higher at 22.5%. Both tuition fees and costs have been on the ascendancy but the former figure has never sufficed to free the medical student from an obligation to society. Even though in subsequent years this debt has been liquidated by the charitable contribution of his services, the physician should gladly aid the schools in their time of need.



In 1951 America's 6,135 new doctors of medicine paid only 25% of the cost of their medical training. The profession is now organized to help meet these medical school deficits. May we expect your contribution soon?

Earmark it for a particular school if you please.

**American Medical
Education Foundation**



535 North Dearborn Street, Chicago 10

Contributions to the Foundation from only three Maine physicians during 1951 made a meager showing due I am sure to lack of awareness of the need. An average contribution of \$25.00 to the Foundation's goal for 1952 would seem a figure which we should set for ourselves. Please give thoughtful consideration to the financial needs of our medical educational system and be ready to make your voluntary contribution early in July.

The Maine Committee of the American Medical Education Foundation consists of the following physicians to whom you may turn for specific information:

C. Harold Jameson, M. D., Chairman
Donald F. Marshall, M. D.
Wallace E. Webber, M. D.
A. W. Desjardins, M. D.
George E. Young, M. D.
Edward Thegan, M. D.
Storer W. Boone, M. D.

Rockand
Portland
Lewiston
South Bristol
Skowhegan
Bucksport
Presque Isle

C. HAROLD JAMESON, M. D.,
President, Maine Medical Association.

EDITORIAL

The Program in Brief

The Program in Brief for the Ninety-Ninth Annual Session of the Maine Medical Association, to be held at The Samoset, Rockland, Maine, Sunday, Monday and Tuesday, June 22, 23 and 24, is published on pages 159, 160 and 161 in this issue of the JOURNAL. A copy of the Official Program will be sent to each member of the Association before the

meeting and it will be published in the June issue of the JOURNAL.

This page is to outline briefly some of the "special features" of the program, which has been arranged to provide something of interest to every member of the Association.

Scientific Sessions

Dr. Loring W. Pratt, Chairman of the Scientific Committee, in previous issues of the JOURNAL, has kept you well informed relative to this part of the program as it has developed and taken shape. Consequently we are not going to enlarge upon this phase of the program but let you find out for yourself by turning to the pages referred to above.

Evening Programs

These, too, speak for themselves. We do, however, want to call your attention to these evening programs, which the ladies are invited to attend; a musical presentation by J. Seelye Bixler, Ph. D., President of Colby College, on Sunday evening; an address by Dr. Louis Bauer, President of the American Medical Association, Monday evening; and the Annual Banquet, Tuesday evening.

Section Meetings

You will note that there are several "Section Meetings" on Monday and Tuesday, as well as several "Luncheon Meetings."

House of Delegates

The House of Delegates will meet on Sunday at 3.00 P. M. and Monday at 4.00 P. M.

You are all well aware of the importance of these meetings to your Association. Let's have a 100% attendance of delegates!

Woman's Auxiliary

The complete program for this group will be published in the June issue of the JOURNAL. Mrs. Clyde I. Swett of Island Falls, President of the Auxiliary, assisted by Mrs. Harry G. Tounge and Mrs. C. Harold Jameson, both of Camden, have a really interesting program underway. Suffice it to say that there will be something for each of you to do during the day. And you will join your doctor husband for the evening programs.

Technical Exhibits

Here you will find old and new friends. They help make these meetings possible—help them by spending some time with them. You will find time set aside on the program for visiting these exhibits.

Maine Medico-Legal Society

The annual meeting of the Maine Medico-Legal Society and County Attorneys will be held Tuesday morning at 10.00 A.M.

Reservations

For Reservations, write to Mr. Roger P. Sonnabend, General Manager, The Samoset, Rockland, Maine. You will note under "Convention Rates," that there are Cottages, on the hotel grounds, which may be of interest to some of you. Mr. Sonnabend will be glad to send you information about these.

Suggested Amendments to Maine Medical Association By-Laws

Amend Chapter VII, Section 1, of the By-Laws by adding at the end of said Section the following:—

“A Committee on Investments
Board of Ethics and Discipline”

Further amend said Chapter VII by renumbering Section 8 thereof as Section 10, and inserting two new Sections, to be numbered 8 and 9, as follows:—

“Section 8. The Investments Committee shall consist of three (3) members, whose duty it shall be, under the direction of the Council, to invest, reinvest, and change investments, of such moneys, securities, and funds of the Association as are not needed for its ordinary running expenses or are held in trust by said Association for stated purposes. Said Committee shall review the list of such moneys, securities, and funds so held, at least twice each year, and if, in its opinion, and with advice of investment counsel, changes therein are necessary or advisable shall so report to the Council with recommendation for such changes.

The terms of the members of said Committee shall be such that the term of one shall expire each year. Since continuity of policy and familiarity with the situation are desirable in these matters, a member shall be eligible for re-election.”

“Section 9. The Board of Ethics and Discipline shall consist of six (6) members, geographically distributed within the State as well as may be, but chosen because of their integrity, and the respect and esteem in which they are held by the profession and the laity.

They shall be elected for terms so that the terms of two members shall expire each year.

Members shall be eligible for re-election to this Board but for election to no other office in the Maine

Medical Association during the periods for which they were elected to this Board.

It shall be the primary duty of the Board to give careful consideration and study to methods and practices which tend to eliminate justifiable complaints against the profession or individual members thereof, and urge upon members the desirability of following such methods and practices.

It shall urge County Societies to hear and dispose of complaints against their members, through their own proper officers, at the local level.

The Board shall act as a board of investigation in cases coming to them,—

- (a) by complaint of a doctor, or any layman or organization;
- (b) by referral from the board of censors of any County Society; or,
- (c) on their own motion.

The Board shall prefer and prosecute before the appropriate judicial bodies charges against any doctor deemed by the Board to be guilty of unethical or unprofessional conduct.

The Board shall have no power or authority to act in any case where the gist of the complaint is or may become the basis for an action in tort against a doctor until and unless such case has been finally adjudicated by a court of competent jurisdiction.

No member of the Board shall participate in deliberation of questions concerning the conduct of a doctor residing in the jurisdiction of that Board member's component society.

The Board shall have power to make rules and regulations of procedure for the handling of matters within its jurisdiction established herein, said rules to become effective upon approval by the Council.”

PROGRAM IN BRIEF
Maine Medical Association
Ninety-Ninth Annual Session

THE SAMOSET
Rockland, Maine

SUNDAY, MONDAY, TUESDAY
JUNE 22, 23, 24, 1952

Arranged by the Scientific Committee
 Loring W. Pratt, M. D., Chairman

SUNDAY, JUNE 22, 1952

3.00 P. M.

First Meeting of the House of Delegates

7.00 P. M.

Dinner:

Speaker—J. Seelye Bixler, Ph. D.—President of Colby College

HEAD AND HEART JOIN AS WALTER SINGS

MONDAY, JUNE 23, 1952

9.00 A. M.

Surgical Panel—Acute Abdominal Emergencies:

Robert L. Allen, M. D., Rockland, Chairman

GASTRIC PERFORATIONS AND HEMORRHAGE

John F. Reynolds, M. D., Waterville

ACUTE PANCREATITIS

Waldo A. Clapp, M. D., Lewiston

ACUTE CHOLECYSTITIS

George E. Young, M. D., Skowhegan

ACUTE APPENDICITIS

Lloyd Brown, M. D., Bangor

DIVERTICULITIS OF THE COLON

Emerson H. Drake, M. D., Portland

Medical Panel—Antibiotics—When and Which:

Wilbur B. Manter, M. D., Bangor, Chairman

George J. Robertson, M. D., Waterville

Milan A. Chapin, M. D., Auburn

George O. Cummings, Jr., M. D., Portland

Frank W. Kibbe, M. D., Rockland

10.45 A. M.

Intermission to Visit Technical Exhibits

11.00 A. M.-12.00 Noon

General Assembly:

Presiding: C. Harold Jameson, M. D., President

Announcements: Loring W. Pratt, M. D., Chairman, Scientific Committee

Speaker: Harry S. N. Greene, M. D., Professor of Pathology, Yale University School of Medicine

Subject: THE SIGNIFICANCE OF THE HETEROTRANSPLANTABILITY OF HUMAN CANCER CELLS

12.00 Noon

Intermission to Visit Technical Exhibits

12.30 P. M.

Luncheon

Luncheon Meetings:

County Presidents and Secretaries

Louis Bauer, M. D., President, American Medical Association, will be present

2.00 P. M.-4.00 P. M.

General Session:

Presiding: Loring W. Pratt, M. D.

THE SURGICAL TREATMENT OF PULMONARY INFECTIONS

John W. Strieder, M. D., Associate Professor of Thoracic Surgery, Harvard Medical School (Sponsored by the Maine Tuberculosis Association)

THE RETENTION OF THE INCOMPLETELY COVERED FOREIGN BODY IN TISSUES WITH SPECIAL APPLICATION TO THE EYE

William Stone, Jr., M. D., Staff of the Massachusetts Eye and Ear Infirmary

THE TREATMENT OF PREECLAMPSIA AND ECLAMPSIA WITH PENICILLIN

George Van S. Smith, M. D., William H. Baker Professor of Gynecology, Harvard Medical School

CAUSES OF DEATH IN THE NEWBORN AND WHAT CAN BE DONE TO PREVENT THEM

Sidney Gellis, M. D., Boston Children's Hospital

4.00 P. M.

Introduction of Visiting Delegates
Election of President-Elect

4.30 P. M.

Second Meeting of the House of Delegates

7.00 P. M.

Dinner:

Speaker—Louis Bauer, M. D., President, American Medical Association

TUESDAY, JUNE 24, 1952

9.30 A. M.

Obstetrical Panel:

Kenneth W. Sewall, M. D., Waterville, Chairman

1. BLEEDING IN THE THIRD TRIMESTER OF PREGNANCY

2. CAESAREAN SECTION

Theodore M. Stevens, M. D., Portland

PROLONGED LABOR AND PELVIC DISPROPORTION

Amy L. Cattley, M. D., Lewiston

MANAGEMENT OF THE THIRD STAGE OF LABOR

Donald Coulton, M. D., Bangor

Radiological Panel:

Jack Spencer, M. D., Portland, Chairman

Forrest B. Ames, M. D., Bangor

Roland D. Clapp, M. D., Portland

Langdon T. Thaxter, M. D., Portland

G. E. C. Logan, M. D., Portland

George W. Holmes, M. D., Belfast

Clark F. Miller, M. D., Auburn

Samuel Blum, M. D., Lewiston

William B. McAvoy, M. D., Waterville

Hugh A. Smith, M. D., Bangor

John D. Southworth, M. D., Togus

This group would like to have both diagnostic problem cases and proven cases with unusual X-ray problems. Any one who has such films is urged to bring them.

11.15 A. M.

Intermission to Visit Technical Exhibits

11.30 A. M.

General Assembly:

Presiding: Robert W. Belknap, M. D.

THE MODERN CONCEPTS IN THE TREATMENT OF PERIPHERAL ARTERIAL DISEASES

Robert R. Linton, M. D., Associate Professor of Medicine, Harvard Medical School

12.00 Noon

Intermission to Visit Technical Exhibits

12.30 P. M.

Luncheon

2.30 P. M.

General Session:

Presiding: C. Lawrence Holt, M. D.

President's Address—C. Harold Jameson, M. D., Rockland

Medico-Legal Society:

Short Talks by Attorney General Alexander LaFleur, Chief of State Police, Col. Francis F. McCabe, and one or two others

The Role of the Medical Examiner in the Identification of the Mutilated Body and the Time of Injury

Joseph E. Porter, M. D., Portland

Edward Flynn, District Attorney, Suffolk County, Massachusetts

7.00 P. M.

Annual Banquet:

Speakers:

Governor Frederick G. Payne

William B. Terhune, M. D., Associate Clinical Professor of Psychiatry, Yale University School of Medicine

Subject: MAKING THE MOST OF MAN

Presentation of Fifty-Year Medals, Five- and Ten-Year Bars

Presentation of Golf Prizes

SECTION MEETINGS

MONDAY, JUNE 23, 1952

Ophthalmological Section of Maine Medical Association:

Richard H. Dennis, M. D., Waterville, Presiding

9.30 A. M.

SYMPOSIUM—GLAUCOMA

Otis B. Tibbetts, M. D., Auburn, Chairman

Paul E. Floyd, M. D. Farmington

Dexter J. Clough, 2nd, M. D., Bangor

Richard J. Goduti, M. D., Portland

Saul R. Polisner, M. D., Portland

12.30 P. M.

SPECIAL LUNCHEON AND BUSINESS MEETING

1.30 P. M.

CONGENITAL GLAUCOMA—with movie of new operation

ARTERIOSCLEROTIC AND HYPERTENSIVE VASCULAR CHANGES IN THE FUNDUS

Harold G. Scheie, M. D., Associate Professor of Ophthalmology, University of Pennsylvania School of Medicine

Pediatric Section of Maine Medical Association:

Clair S. Bauman, M. D., Waterville, Presiding

9.30 A. M.

PREMATURE CARE
ORGANIZATION MEETING
ELECTION OF OFFICERS

Medico-Legal Society of Maine

10.00 A. M.

JOINT BUSINESS MEETING WITH COUNTY ATTORNEYS'
ASSOCIATION
ELECTION OF OFFICERS

TUESDAY, JUNE 24, 1952

Otolaryngological Section of Maine Medical Association:
John E. Whitworth, M. D., Bangor, Presiding

9.30 A. M.

RESPIRATORY DIFFICULTIES IN THE FIRST SIX MONTHS
OF LIFE

12.30 P. M.

Luncheon Meetings:
MAINE HEART ASSOCIATION
MAINE RADIOLOGICAL SOCIETY
MAINE TRUDEAU SOCIETY

SPECIAL NOTICES

Art-Hobby Exhibit

The second annual Art-Hobby Exhibit will take place during the annual session.

If you plan to participate in this Exhibit please send information relative to your entry to the Maine Medical Association, 142 High Street, Portland, Maine, without delay.

Golf Tournament

The Golf Tournament, now an established feature of the Association's annual session, will be arranged by Francis A. Winchenbach, M. D., of Bath.

Woman's Auxiliary to the Maine Medical Association

The Woman's Auxiliary Annual State Meeting will be held in conjunction with the Maine Medical Association Annual Session, June 22, 23 and 24.

Mrs. Clyde I. Swett of Island Falls, President of the Auxiliary, will have charge of the program and will be assisted by Mrs. Harry G. Tounge, Chairman, and Mrs. C. Harold Jameson, Co-Chairman, of the local committee on arrangements.

Members of the Auxiliary are invited to attend the Maine Medical Association's evening programs.

Convention Rates

THE SAMOSET

Rockland, Maine

The Samoset:

Double room with bath—\$13.00 per person per day.
Single room with bath—\$15.00 per day.
Double or single room without bath—\$11.00 or \$12.00 per person per day.

Meals for non-registered guests:

Breakfast	\$1.50
Luncheon	2.50
Dinner	4.00
Banquet	4.00

Cottages—on the hotel grounds:

Double room—\$11.00 or \$12.00 per person per day.
Single room—\$13.00 per day.

For Reservations—write to Mr. Roger P. Sonnabend,
General Manager, The Samoset, Rockland, Maine.

MAKE YOUR RESERVATIONS TODAY

COUNTY SOCIETIES

Androscoggin

President, Alcide F. DuMais, M. D., Lewiston
Secretary, Paul G. Lemaitre, M. D., Auburn

Aroostook

President, Clement L. Donahue, M. D., Caribou
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Thomas A. Martin, M. D., Portland
Secretary, Ralf S. Martin, M. D., Portland

Franklin

President, Wallace H. Duffy, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Silas A. Coffin, M. D., Bar Harbor
Secretary, Arthur M. Joost, Jr., M. D., Bucksport

Kennebec

President, Francis H. Sleeper, M. D., Augusta
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, Gilmore W. Soule, M. D., Rockland
Secretary, Robert L. Allen, M. D., Rockport

Lincoln-Sagadahoc

President, John F. Dougherty, M. D., Bath
Secretary, M. W. Westermeyer, M. D., Bath

Oxford

President, Edward L. Reeves, M. D., Lewiston
Secretary, Dexter E. Elsemore, M. D., Dixfield

Penobscot

President, Wesley C. McNamara, M. D., Lincoln
Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Linus J. Stitham, M. D., Dover-Foxcroft
Secretary, George C. Howard, M. D., Guilford

Somerset

President, Harland G. Turner, M. D., Norridgewock
Secretary, H. Carl Amrein, M. D., Madison

Waldo

President, Ernest W. Stein, M. D., Pittsfield
Secretary, Raymond L. Torrey, M. D., Searsport

Washington

President, DaCosta F. Bennett, M. D., Lubec
Secretary, Karl V. Larson, M. D., East Machias

York

President, Kenneth J. Cuneo, M. D., Kennebunk
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Cumberland

A regular meeting of the Cumberland County Medical Society was held at the Maine General Hospital, Portland, Maine, March 27, 1952.

The meeting was called to order by Dr. Thomas Martin, President. Dr. Edward W. Colby, stated that the U. S. Public Health Service was willing to move into Portland this fall with eighteen portable photoroentgen units completely equipped and completely staffed for the purpose of taking chest films on the citizenry of Portland and Cumberland County. After some discussion, it was moved and seconded that the Cumberland County Medical Society approve in principal the program and that a committee be appointed by the President to investigate this proposed program and report to the Society at the next meeting for its final action. The following members were appointed to serve on this committee: Dr. Edward A. Greco, Chairman; Dr. Albert Aranson, Dr. Jack Spencer, Dr. G. E. C. Logan and Dr. Emerson H. Drake.

The Secretary read two letters from W. Mayo Payson, Executive Secretary of the Maine Medical Association. The first, stating that there were numerous babies born in the State of Maine, which were not registered and that birth registration in Maine is the poorest of any eastern state north of the Mason and Dixon's Line. He pointed out that there is a stiff penalty for neglect of this duty and urged the coöperation of the County Society members. The second letter stated that an insurance company had offered to the Council of the Maine Medical Association a Group Sickness and Accident Policy for the members of the Association, if 50% of them would enroll. The following members were appointed to serve as a committee to investigate this insurance: Dr. Benjamin Zolov, Chairman; Dr. J. Foster Wellington and Dr. G. Hermann Derry.

It was then pointed out by the Secretary that in February the Society received a letter from the Greater Portland Dental Society asking the Society to approve fluoridation of the public water supply, and that the President had appointed the following committee: Dr. Edward W. Colby, Chairman; Dr. G. E. C. Logan and Dr. C. Lawrence Holt. Dr. Colby presented a report, which is incorporated into the minutes. This report ended with the following statement:

"Resolved: that the Cumberland County Medical Society be recorded as favoring properly controlled fluoridation of the public water supply as a method of partial prevention of dental decay and to be further recorded as requesting that all concerned with the accomplishment of this procedure undertake to have it instituted at the earliest possible opportunity."

Following some discussion, this resolution was placed in the form of a motion, duly seconded and carried.

Dr. Joseph F. Ross, Associate Professor of Medicine, Boston University, Director of the Hematological Section and Radioisotopes Section of the Evans Memorial Hospital, speaker of the evening was introduced by Dr. Martin. His subject was "The Practical Applications of Radioactive Iodine in the Diagnosis and Therapy of Thyroid Disease." His talk was exceptionally interesting and instructive, particularly so since he pointed out that permits had already been granted the Maine General Hospital for the use of radioactive isotopes, and that the method which he discussed in his paper would be put in operation, very likely within the year.

A special clinic composed of interesting hematological cases, which preceded the meeting, was prepared by the Staff of the Maine General Hospital because of the presence of Dr. Ross.

RALF MARTIN, M. D.,
Secretary.

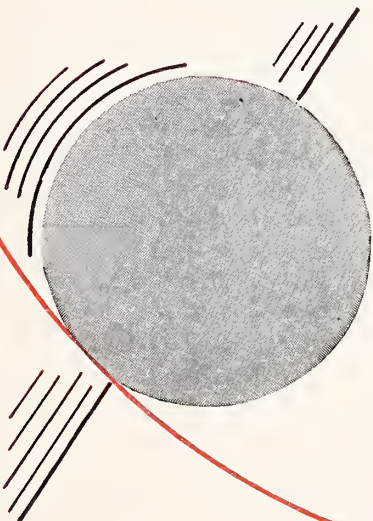


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Also of value as: *Peripheral Vasodilator²*

1. Kissin, M., Stein, J. J., and Adelman, R. J.: *Angiology* 2:217 (June) 1951.

2. Rickles, J. A. J. *Florida M.A.* 38:263 (Oct.) 1951.

*Contains at least 80% of anhydrous theophylline.



SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

Hancock

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, April 9, 1952. There were nine members and one guest present.

The meeting was opened by Dr. Silas A. Coffin, President. Drs. Ernest L. Coffin, Arthur M. Joost, Jr., and Hyman Millstein, were appointed to write a Resolution on the death of Dr. Charles M. Sumner.

A very interesting talk, illustrated with slides showing pathological specimens, was given by Dr. J. Robert Feeley of Bangor, on the subject of Tumors of the Testicle. A discussion period followed.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Kennebec

A regular meeting of the Kennebec County Medical Association was held at the Central Maine Sanatorium, Fairfield, Maine, March 20, 1952. Dinner at 6 P. M. was served by the institution to forty odd members.

This was followed by the business meeting; President Francis H. Sleeper in the chair.

Dr. Sleeper appointed the following members to the Medical Advisory Committee to the Blood Program (Red Cross)—

Augusta—Paul D. Giddings, M. D., Oakley A. Melendy, M. D. Gardiner—Clarence R. McLaughlin, M. D., Frank B. Bull, M. D. Winthrop—James N. Shippee, M. D., Leon D. Herring, M. D. Waterville—Charles E. Towne, M. D., Frederic B. Champlin, M. D.

President Sleeper welcomed the members of Somerset County as our guests.

Dr. C. Harold Jameson, President of the Maine Medical Association, spoke briefly on the affairs of the Association, and mentioned the attempt to raise funds for the American Medical Education Foundation.

The President introduced Dr. George E. Young who headed a Symposium on Tuberculosis. Dr. Irving I. Goodof discussed the biochemistry of the tubercle, formation of the giant cell and tubercle. Dr. Frederic Champlin discussed physical diagnosis and differential diagnosis of the problem. Dr. William B. Grow discussed control and treatment; X-ray; antibiotics and bed rest. Dr. Young discussed the whole problem; including the value of mass surveys. He was requested to give a discussion of X-ray and diagnosis and treatment.

President Sleeper expressed appreciation to Dr. Grow for an excellent meeting.

Respectfully submitted,

A. H. MORRELL, M. D.,
Secretary.

Lincoln-Sagadahoc

The regular monthly meeting of the Lincoln-Sagadahoc County Medical Society was held at "Days", Newcastle, Maine, on April 15, 1952. There were fourteen members and guests present. A very satisfactory meeting was had.

Dr. Robert Bennett from the New England Center Hospital, gave a practical discussion on Fluid Balance.

M. W. WESTERMEYER, M. D.,
Secretary.

Washington

A regular meeting of the Washington County Medical Society in conjunction with the St. Croix Medical Society was held on Thursday, April 24, at the DeMonts Restaurant, Calais, with 17 members and guests present. After an excellent roast beef dinner, Dr. P. J. Mundie, president of the St. Croix Medical Society introduced Dr. Paul Patterson, assistant physician, Children's Hospital, Boston, who spoke on Pancreatic Fibrosis and Some Aspects of Infant Mortality.

Dr. Patterson demonstrated one case of late appearing pancreatic fibrosis in a 5-year-old child from St. Stephen, N. B., who showed some of the typical symptoms of pancreatic fibrosis. He stated that it is a diagnosis probably often missed and that the disease should be suspected in every infant that failed to gain properly even with a good or better than normal appetite. He said that they usually have almost constant respiratory disease to which they frequently succumb. He stated that diagnosis is fairly simple with use of the X-ray negative test. Treatment is use of pancreation plus special food such as nutramigen and daily use of aureomycin, terramycin or sulfadiazine. Prognosis is much more favorable with proper treatment. He stated that the disease is most common in people originating in Nova Scotia, New Brunswick, and upper part of Maine.

Dr. Patterson then spoke on some aspects of infant mortality saying that the death rate has been much reduced except for the first few days of life.

His talks were well received and provoked some active discussion.

It was voted to leave time and place of next meeting to president and secretary.

KARL V. LARSON, M. D.,
Secretary.

NECROLOGIES

Harry Smith Emery, M. D.

1872 - 1951

Doctor Harry Smith Emery of Portland, devoted and beloved physician, died at the age of 79 on October 25, 1951. He was born in Buxton, Maine, January 30, 1872, the son of Alpheus and Mary Smith Emery. He received his Academic Degree in 1893 from Bowdoin College, before beginning his professional studies. An Academic Degree was not commonly required at that time. In 1897 he received the Degree of Doctor of Medicine from Jefferson Medical College in Philadelphia. His first office was at the junction of Forest and Stevens Avenues, in the home of the recently

deceased Civil War Surgeon, Doctor Alexander McIntosh Parker. The first patient to seek the advice of the new doctor was the Reverend Fred M. Houghton, whose symptoms were accurately interpreted as being due to the presence of a brain tumor. His wife, the former Josephine Walker, died in 1946.

Doctor Emery was a member and Past President of the Cumberland County Medical Society, a member of the Maine Medical Association, American Medical Association and Portland Medical Club. He was one of the relatively few

Cumberland County physicians to practice actively for over fifty years. He was presented with the Maine Medical Association's Gold Medal in 1947.

From a recent issue of the *Annals of Internal Medicine*, we repeat, "He was one of the first in his community to specialize in Internal Medicine and one of the first in Maine to learn and practice the modern treatment of diabetes. From 1914 to 1919 he was instructor of Clinical Medicine at the Bowdoin Medical School. From 1919 until the school closed in 1921, he was Assistant Professor of Medicine. In 1930 he became a Fellow of the American College of Physicians

and later became a Life Member. He served on the attending staff of the Maine General Hospital; later he was a member of the associate staff. He was President of the Cumberland County Medical Society in 1939 . . .

"Doctor Emery will be remembered by his former patients as an unselfish physician worthy of the vast confidence they felt in him. He will be remembered by his colleagues as a careful diagnostician and as a consultant who never failed to bring a fresh point of view and a new light into every difficult situation."

Charles M. Sumner, M. D.

1909 - 1952

On February 14, 1952, Charles M. Sumner, M. D., passed away very suddenly at his home in West Sullivan, Maine.

Dr. Sumner was born in Penacook, N. H., on July 30, 1909. He received his early education in the schools of that town. Following graduation from high school, he attended Dartmouth College and received his M. D. degree from McGill University, Montreal, in 1933. He interned at the Eastern Maine General Hospital in Bangor. In 1934, he moved to Sullivan and started general practice. During World War II, he left his practice to serve as a Captain in the Medical Corps of the U. S. Army.

He is survived by his wife and four children.

Dr. Sumner was a young man taken from his profession at an early age. He was ever ready to work for the betterment of the communities he served. His particular interest, outside his large general practice, was in the field of education. In large measure through his efforts, the towns of Sullivan, Winter Harbor, Gouldsboro and Sorrento have built a modern consolidated high school. Since his death, it has been voted to name the new school the Dr. Charles M. Sumner High School.

Frederick Eugene Wheel, M. D.

1867 - 1952

Doctor Frederick E. Wheel of Westbrook, died at the age of 84 on January 16, 1952, following a long illness. He was born in North Andover, Massachusetts, November 11, 1867, the son of Josiah and Hannah Southwick Wheel. He was educated at Phillips-Exeter Academy and was graduated from the University of New York Medical School in 1892. He practiced in Stevens Point, Wisconsin, from 1892 to 1898 and in Rumford, Maine, from 1898 to 1918, when he moved to Westbrook, where he engaged in general practice up until a few years before his death. He served as city physician of Westbrook for 16 years.

Doctor Wheel was most conscientious in his practice and was loved by his patients and had the respect of all his associates. He was a member of the Cumberland County Medical Society, the Maine Medical Association and the American Medical Association. He received the Maine Medical

Association's Fifty-Year Medal in 1942, and Fifty-Five Year Bar in 1947.

He was a member of Temple Lodge of Masons, a Past President of the Maine Three-Quarter Century Club, Past Grand Officer of Maine Knights of Pythias; Past Grand Chancellor Knights of Pythias; Member and Past President of Westbrook Lions Club and Past President of the Oxford County Medical Society. In World War I, he was a Captain in the Medical Corps, and in 1924 was appointed a Major in the Medical Corps Reserve. He was later appointed to the office of Surgeon General with the Uniform Rank of Brigadier General.

Two weeks before his death he received a Fifty-Year Medal from Temple Lodge of Masons.

His wife, Mrs. Harriett James Wheel, died in 1945.

NEWS AND NOTES

State of Maine

Board of Registration of Medicine

Adam P. Leighton, M. D., Portland, Secretary.

List of physicians licensed to practice medicine in the State of Maine, March 12, 1952.

Through Examinations

John H. Cole, M. D., Scarborough, Maine.

Fernand Normandeau, M. D., Clair, New Brunswick, Canada.

John B. Titherington, M. D., Portland, Maine.

Percy T. Whitney, M. D., Worcester 5, Mass.

Roy H. Kennedy, M. D., Charlottetown, P. E. I. (Licensed by special examination, December 27, 1951.)

Through Reciprocity

Stanley B. Covert, M. D., E. Pepperell, Mass.

Wirt L. Davis, M. D., Arlington, Mass.

Elmer V. Kenneally, M. D., Lexington, Mass.

Gordon M. Morrison, M. D., Boston, Mass.

Eleanor Robbins, M. D., Northampton, Mass.

David Shapira, M. D., Bangor, Maine.

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Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.

Bath Memorial Hospital, Bath, Maine, 2nd Tuesday, 3.00-5.00 P. M., Francis A. Winchenbach, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Waldo A. Clapp, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

Department of Health and Welfare
Division of Maternal and Child Health
(Including Services for Crippled Children)
Clinic Schedule—1952

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: Jan. 4, Feb. 11, Mar. 10, Apr. 14, May 5, June 9, July 14, Aug. 11, Sept. 8, Oct. 13, Nov. 3, Dec. 8.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: Jan. 18, Feb. 15, Mar. 21, Apr. 18, May 16, June 20, July 18, Aug. 15, Sept. 19, Oct. 17, Nov. 14, Dec. 12.

Rumford — Community Hospital, 1.30-3.00 p. m.: Mar. 19, June 18, Sept. 17, Dec. 17.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Feb. 28, Apr. 24, June 26, Aug. 28, Oct. 23, Dec. 18.

Rockland — Knox County Hospital, 1:30-3.00 p. m.: Feb. 21, May 8, Aug. 21, Nov. 13.

Machias — Normal School, 1.30-3.00 p. m.: Feb. 13, Apr. 2, June 11, Aug. 13, Oct. 8, Dec. 10.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.—1.00-3.00 p. m.: Jan. 8, Mar. 12, May 13, July 9, Sept. 9, Nov. 5.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: Mar. 11, July 8, Nov. 4.

Fort Kent — Normal School, 10.00-1.00 p. m.: Jan. 9, May 14, Sept. 10.

Bangor — Eastern Maine General Hospital, 1.30-3.00 p. m.: Jan. 24, Mar. 27, May 22, July 24, Sept. 25, Nov. 20.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: Jan. 25, Feb. 29, Mar. 28, Apr. 25, May 23, June 27, July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

HARD-OF-HEARING CLINICS

Waterville — Thayer Hospital, 1.30-3.30 p. m.: Feb. 20, June 4, Sept. 3, Dec. 3.

PEDIATRIC CLINICS

Bangor — Eastern Maine General Hospital, 1.30 p. m.: Jan. 25, Feb. 29, Mar. 28, Apr. 25, May 23, June 27, July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

Waterville — Thayer Hospital, 1.30 p. m.: Jan. 8, Feb. 5, Mar. 4, Apr. 8, May 6, June 3, July 1, Aug. 5, Sept. 2, Oct. 7, Nov. 4, Dec. 2.

Presque Isle — Northern Maine Sanatorium, 1.30 p. m.: Jan. 23, Mar. 26, May 21, July 23, Sept. 24, Nov. 19.

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Medical Aspects of Organic Phosphorus Containing Insecticides—Continued from page 155

PREVENTION

Organic phosphate poisoning will not occur if the individual avoids all skin contact, inhalation and ingestion of the material.

Proper engineering and process controls eliminate a great many of the hazards of absorption.

In instances where exposure cannot be avoided, adequate personal protection may be secured by wearing a clean, completely waterproof and vaporproof suit covering the entire body including feet, hands and head, wearing a full face-piece gas mask with effective organic vapor canister, thorough cleaning of contaminated equipment, disposal of contaminated waste, and thorough bathing immediately after removal of protective clothing. In actual practice, it is very seldom that an individual is both able and willing to carry out all these precautions completely. He could not live for long in completely impermeable clothing. Therefore, compromises must be resorted to, but they should be as near to the ideal as practicable under the circumstances.

Periodic blood cholinesterase activity determinations as outlined under laboratory procedures above will serve as a check on the adequacy of protective measures taken and will furnish a warning when exposure must be terminated to avoid onset of clinical symptoms.

Education of both the general public and the users of these materials to the very real hazards involved in even casual and indirect contact with them is of great value. The home or home garden use of these materials should be actively discouraged.

The prescription of atropine for use as a first-aid procedure has been advocated. While this may be justified in certain circumstances, the physician should be very cautious in prescribing for use in unskilled hands this dangerous drug, which may also confuse the diagnosis and delay treatment in case of organic phosphate poisoning.

Prompt and adequate treatment of cases will prevent death. All of the known fatalities occurred when treatment was delayed or when the need for large doses of atropine was not recognized.

REFERENCES

1. Michel, H. O.: An electrometric method for the determination of red cell and plasma cholinesterase activity. *J. Lab. and Clin. Med.*, 34:1564 (Nov.), 1949.
2. Stedman, E., Stedman, E. S., and White, A. C.: Comparison of cholinesterase activity of blood-sera from various species. *Biochem. J.*, 27:1055, 1933.
3. Rider, J. A., Schulman, S., Richter, R. B., Moeller, H. C., and DuBois, K. P.: Treatment of myasthenia gravis with octamethyl pyrophosphoramide. *J. A. M. A.*, 145:967 (March 31), 1951.

Note: The Bureau of Adult Health, at 2002 Acton Street, Berkeley, maintains a list of laboratories known to be prepared to do blood cholinesterase activity levels. The list is available on request. It is probably not complete and information regarding additional laboratories will be welcomed. The Bureau will also be glad to assist interested laboratories in starting such services.

Note: OMPA is, to some extent, a systemic insecticide (i. e., the plant absorbs the material and thus itself becomes toxic to the insect). It is probable that other systemic organic phosphate materials will soon be registered for sale in California. Some of these are not cholinesterase inhibitors in vitro but are converted to such within the human body with the result that the toxicology is essentially the same as that of the presently used organic phosphate materials.

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Office furniture and equipment, including microscope, belonging to the late Dr. Joseph G. Ham.

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No. 6

TRACHEOTOMY IN SPINAL RESPIRATORY PARALYSIS

ROBERT L. OHLER, M. D., and PIERRE E. PROVOST, M. D.*

The literature of recent years contains a number of discussions¹⁻⁴ of the value of tracheotomy in bulbar poliomyelitis, first advocated in 1932 by Wilson,⁵ as a means of bypassing pooled pharyngeal secretions and preventing the deleterious effects^{3, 4, 6} of hypoventilation, anoxia, CO₂ retention, and atelectasis which follow the inhalation of pharyngeal secretions or actual obstruction of the upper respiratory passages from secretions or vocal cord paralysis. It has been pointed out repeatedly by the advocates of this measure that when a patient is unable to swallow, attempts at intermittent pharyngeal suction are often futile and that elevation of the foot of the bed to an angle of 17 to 20 degrees, which is necessary to provide drainage proximally of fluid from the pharynx, is often impractical.³ It is this inability to swallow which is the key to the respiratory obstructive problem in bulbar poliomyelitis.⁴

It has been less widely emphasized though briefly alluded to,^{4, 6} however, that atelectasis and consequent anoxia with the attendant danger of infection occur with alarming frequency in patients in whom swallowing is intact but who are unable to raise accumulated tracheobronchial secretions because of marked impairment in their ability to cough. These secretions may arise locally in the trachea and bronchi or may be aspirated into the trachea from above. The need for the protection afforded by an efficient cough, of course, is in direct proportion to the amount and viscosity of secretions which accumulate in the tracheo-

bronchial tree. An otherwise minor respiratory infection under such circumstances frequently becomes a serious hazard whenever secretions accumulate in sufficient quantity to obstruct even temporarily any portion of the tracheobronchial tree. If the material cannot promptly be raised, normal or artificial respiratory effort results in aspiration of the material to a more distal position with bronchial plugging followed by atelectasis with its dangerous sequelae of anoxia and infection.^{7, 9} Prompt bronchoscopic aspiration then becomes imperative unless the alternative of suction through a catheter passed between the vocal cords into the trachea is possible.⁸ The latter procedure, in our hands, has frequently failed.

Poliomyelitis or other diseases involving the spinal respiratory nerves with intercostal or diaphragmatic paralysis or both, with consequent loss of the muscle power required for an efficient cough, present a situation, usually of long duration, where the problem of tracheobronchial obstruction may recur frequently and require oft-repeated emergency bronchoscopy. This is attended by emotional and physical trauma as well as the practical difficulties involved in having a competent bronchoscopist constantly available.

It was in such a situation that we were first led to attempt tracheotomy as a means, not of relieving obstruction of the upper respiratory tract, but of providing an opening through which nursing personnel could carry out frequent catheter aspirations of the trachea and major bronchi. This procedure has in our hands produced such gratifying results that it is thought worthwhile to report our experience. We

* From VA Center, Togus, Maine.



Fig. 1

Case 1. Atelectasis of a segment of right upper lobe, 10-6-50.

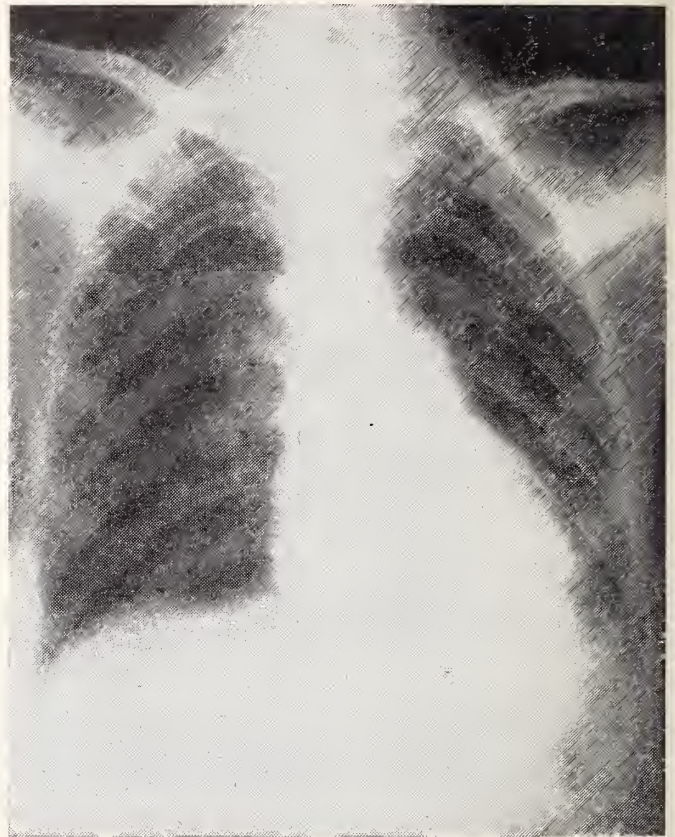


Fig. 3

Case 1. Re-expansion of lung followed repeated suction with catheter introduced into tracheotomy opening.



Fig. 2

Case 1. Massive collapse of left lung, 10-30-50.



Fig. 4

Case 2. Chest film of 7-15-51 showing marked elevation of right diaphragm.

are in entire agreement with the report of Atkins⁹ on this general subject as applied to certain postoperative patients whose inability to cough efficiently was the consequence of the postoperative state, debility, unconsciousness, or pulmonary disease.

CASE REPORTS

(1) D. M., a 24-year-old white male, automobile mechanic, was admitted to the hospital on 9-14-50 with acute anterior poliomyelitis of one week's duration involving all extremities and abdominal musculature, and with mild subjective respiratory distress, but with no signs indicating involvement of cranial nerves. Swallowing was possible at all times. Spinal fluid was consistent with the diagnosis of acute poliomyelitis. There was no progression of the paralysis of the extremities after admission to the hospital, but within several hours after entry, breathing was noted to be regular but shallow and subjective respiratory distress was present. Lungs were clear to physical examination at this time. He could count only to ten. Some difficulty in expelling tracheal secretions was evident; cough was frequent but weak and unproductive. He was placed in a tank-type respirator where he remained at least part of every day until December 13, 1950.

On October 6, 1950, he suddenly became severely dyspneic. Breath sounds were absent over the right lung anteriorly. X-ray revealed increased density of the right upper lobe with displacement of the mediastinal structures to the right and narrowing of interspaces. (Fig. 1) Cough was ineffective. Vigorous pounding on the back and attempted tracheal suction through the nose as well as pharyngeal aspirations were followed by the return of breath sounds over the right upper lobe and normal X-ray findings. Penicillin therapy was commenced in usual doses. Atelectasis of the right upper lobe recurred on October 13 and 14, 1950, requiring bronchoscopy for relief each time. Potassium iodide orally, steam inhalation and aureomycin intravenously were begun. By October 20, 1950, he remained out of the respirator for four hours daily. On October 21, 1950, atelectasis of the left upper lobe occurred but was relieved without recourse to bronchoscopy. October 27th collapse of the left upper lobe again occurred and two bronchoscopic aspirations in the next 24 hours failed to produce complete re-expansion of the lung. By October 30th, atelectasis of the entire left lung was present (Fig. 2) and the rectal temperature rose to 102°. Bronchoscopy again accomplished little although copious amounts of purulent sputum were obtained. Following another bronchoscopy, a tracheotomy was performed on November 2, 1950; through the cannula a soft, rubber catheter was inserted as far as possible and suction applied at intervals of ½ hour. By November 7, 1950, evidence of atelectasis had

disappeared (Fig. 3) and the temperature had become normal. His ability to remain out of the respirator rapidly increased. Antibiotic therapy was maintained for several weeks, and over the next three months the frequency of tracheal suction was gradually lessened. He was allowed out of bed, using the respirator at night only. Improvement was continuous marred only by an episode of pneumonia and atelectasis during July, 1951, which occurred while he was away from the hospital on a two-weeks' visit, and which responded to antibiotic therapy and frequent tracheal aspirations. He was discharged on August 10, 1951, after the tracheotomy was closed, without need for the respirator. Paralysis of trunk and extremities has remained disabling but otherwise he is in good health.

(2) A. G., a 30-year-old, white male student, was admitted to the VA Hospital on July 15, 1951, because of progressively increasing respiratory distress for the previous two days, seventeen months after an attack of acute anterior poliomyelitis. Residual defects had consisted of extensive paralysis of the lower extremities, marked weakness of the intercostal muscles and elevation of the right diaphragm.* A tank respirator had been used for part of each day until recently. Upon admission he was moderately cyanotic and respiratory movements were limited. The right diaphragm did not move. Breath sounds were normally present except over the right lower chest. The throat was injected. It was considered that he had a mild upper respiratory infection. Antibiotic therapy was instituted prophylactically and he was placed in a tank respirator with prompt improvement in his color and comfort. By the fifth hospital day, he could with comfort remain out of the respirator for several hours, but on the sixth day tracheobronchial rales were heard and he was uncomfortable outside the respirator. Vital capacity was 600 c.c., three hundred c.c.'s less than his usual average. Respiratory distress increased and on the 9th hospital day, breath sounds could not be heard over the right lung. A wedge-shaped area of atelectasis was apparent in the X-ray in the region of the right apex. (Fig. 5) Bronchoscopy produced temporary improvement. Signs of consolidation, however, appeared over the right upper lobe, and respiratory distress became marked. A tracheotomy was done followed by frequent suction with a catheter. Within twenty-four hours, resonance and vesicular breath sounds had reappeared over the right upper lobe; gradual improvement followed (Fig. 6) until the respirator was no longer required. Several months later, less than 24 hours following removal of the tracheotomy tube with a view to allowing the hole to close, massive complete tracheal obstruction occurred with collapse, unconsciousness and intense cyanosis. Prompt suction through the now greatly contracted tracheotomy

* Fig. 4.



Fig. 5

Case 2. Atelectasis of right upper lobe.

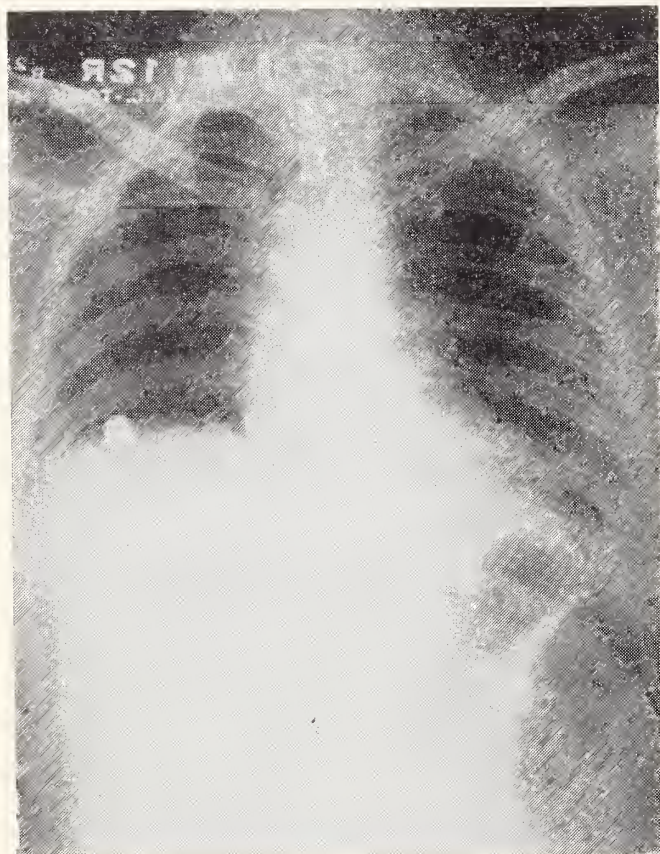


Fig. 6

Case 2. Film taken 1 month after tracheotomy showing maximum re-expansion of right lung following repeated tracheobronchial aspiration of secretion through tracheal opening.

opening proved lifesaving. During the remainder of his hospital course, he required aspiration for removal of respiratory secretions four or five daily, but no further atelectasis or respiratory infection occurred. He was transferred on October 9, 1951, to another Veterans Hospital, for personal reasons, with the tracheotomy tube in place.

(3) F. W., a 33-year-old, white male draftsman, who developed poliomyelitis in September, 1949, was admitted to the VA Hospital on August 28, 1950, with extensive residual weakness of the skeletal and intercostal muscles and diaphragm. For some time before admission, he had customarily remained in the respirator every other night and for two hours each morning. On admission, respiratory movements of the chest were poor, the right side moving more than the left. Accessory respiratory muscles in the neck were used for ordinary breathing. Both diaphragms were elevated by X-ray. Heart and lungs appeared otherwise normal. After several months of only occasional use of the respirator when fatigued, he contracted a "cold" on November 13, 1950, with weak cough productive of whitish mucus. Cultures were taken and prophylactic penicillin started. Two days later, he suddenly collapsed, became cyanotic and had a generalized convulsion. Examination revealed massive collapse of the left lung. This was relieved by emergency bronchoscopic aspiration and although pulmonary aeration seemed fair, he was unable to remain out of the respirator. Following a second episode of bronchial obstruction on the left, tracheotomy to provide access for suction was performed with relief of signs of atelectasis during the next week. Frequent aspirations and terramycin therapy were used and he gradually improved. However, on January 17, 1951, he suddenly turned blue and expired in spite of tracheotomy suction, oxygen administration through the tracheotomy, and artificial respiration. An autopsy revealed the lungs to contain copious amounts of frothy, bloody fluid. The heart was grossly and microscopically normal as were the other organs. Examination of the central nervous system was not permitted.

(4) L. S., 30-year-old, white male laborer, was first admitted to the hospital in September, 1951, for neuritis of the right optic nerve from which he recovered almost completely after several weeks of cortisone therapy. He was readmitted on December 3, 1951, recounting a history of vomiting and hiccoughs for twelve days. Four days before entry, difficulty in voiding and weakness of the legs developed. Dehydration, tetany, absent abdominal and cremasteric reflexes, and bilateral Babinski signs were present; in the electrocardiogram were changes consistent with electrolyte deficiency.

During the next several days, weakness of legs progressed to complete paraplegia; a level appeared at the nipple line below which sensation was markedly impaired, with loss of temperature perception above the nipple on the left. Bilateral pallor of the temporal portions of the optic disks was seen. The upper extremities became weak and the left arm atoxic; deep tendon reflexes in the lower extremities became increased and later diminished; abdominal reflexes remained absent; Babinski signs persisted and dysarthria appeared. Spinal fluid examination revealed no evidence of spinal block. The fluid contained 10 leukocytes and 130 erythrocytes per cu. m.m. and 67 mms. of protein per 100 c.c. Colloidal gold test was 00000000 and no bacteria were found. On December 10, 1951, respirations were noted to be shallow; cough was ineffective, but swallowing was performed normally. After consultation with Dr. George Maltby of Portland, the diagnosis of neuromyelitis optica (Devic) was made.

On the evening of December 10, 1952, respirations were found to be shallow with marked diminution of intercostal breathing and he was mildly cyanotic. He could count to 13. Attempts at coughing were ineffective. The trachea deviated to the left and breath sounds were almost absent over the left upper lobe. Tracheotomy was performed after attempts at tracheal suction by oral and nasal routes, and frequent catheter suction was instituted because it was felt that a bronchoscopic aspiration would not protect him against recurrent episodes of this nature. Within two hours after removing a large amount of tenacious mucopurulent material by this method, the signs of atelectasis had disappeared. An X-ray of the chest on the next morning was normal.

Coincidentally with the administration of ACTH (Armour) intravenously over a period of several weeks, gradual improvement in intercostal motion, vital capacity, effectiveness of cough, and a partial return of motor power occurred. Frequency of routine aspiration through the tracheotomy opening was gradually reduced and no further episodes of this kind have occurred. Ultimate prognosis remains in doubt.

COMMENT

Each of the four cases summarized above responded to tracheotomy performed to provide direct access to the trachea permitting removal of damaging secretion. Rapid relief of bronchial obstruction and expansion of collapsed lung tissue followed on a number of occasions. In cases 1 and 4 eventual return of respiratory muscle function resulted in the re-establishment of adequate cough; this has permitted permanent closure of the tracheotomy openings.

It is felt that in case 3 residual pulmonary function was less than adequate at the time of admission to

the hospital, and that chronic anoxia and hypercapnia were probably already established. It is considered that in spite of the apparent benefit afforded by the relief of tracheobronchial obstruction, additional damage sufficient to reduce pulmonary ventilation below the minimal level necessary for life resulted from recurrent atelectasis and infection. This conclusion is suggested by the studies of Lukas and Plum.⁷ The eventual outlook in case 2 is probably poor for the same reason.

The following considerations in the management of patients with significant respiratory muscle paralysis appear to be important:

1. Careful observation with awareness of the early symptoms of asphyxia, namely, restlessness, apprehension, distress and disorientation. As shown by Lukas and Plum,⁷ frequent determinations of vital capacity may provide early warning that ventilation is becoming inadequate, allowing prompt search for respiratory tract obstruction or infection.
2. All possible measures should be taken to prevent and treat even minor respiratory infections. Cultures of secretions should be taken and prompt antibiotic therapy or prophylaxis instituted.
3. In the presence of severe respiratory weakness, nothing should be used which will cause drying of secretions or depression of respiratory effort. Opiates are contraindicated.
4. Although copious bronchial secretions are undesirable, use of expectorants such as potassium iodide, and adequate humidification of the atmosphere are necessary to prevent drying of secretions.
5. Use should be made of the simple measures of postural drainage and pharyngeal suction, and attempts made to pass a nasal catheter through the larynx whenever occlusion of respiratory passages by secretions is threatened.
6. The respirator should be used whenever ventilation becomes inadequate.
7. Bronchoscopic aspiration is frequently a life-saving procedure.
8. Any recurrent tracheal or bronchial obstruction by accumulated secretions in patients with an inadequate cough mechanism due to respiratory muscle weakness is an important indication for tracheotomy.

The care of patients having tracheotomies has been well-outlined by Cummings.⁴ A patient requiring both the respirator and tracheotomy presents a mechanical problem which has been solved in various ways.^{4, 10, 11} We have used the Emerson tank-type respirator with a specially fashioned retractor attached to a frame* fixed to the respirator bed to

* Designed by Mr. Frank Stultz, Hospital Attendant, Veterans Administration, Togus, Me.

retract the rubber collar far enough to uncover the tracheotomy opening.

SUMMARY

1. Tracheotomy as a means of by-passing the accumulated pharyngeal secretions in bulbar poliomyelitis with inability to swallow has been widely advocated, and its value has been confirmed by extensive experience during poliomyelitis epidemics in recent years.

2. Less well-appreciated, however, is a second indication for tracheotomy in poliomyelitis. This is its use to provide direct access to the trachea and major bronchi, allowing frequent removal of accumulated obstructing secretions by personnel untrained in the more complicated procedures of bronchoscopy and laryngeal catheterization. The application of this procedure, particularly in patients having marked weakness of respiratory muscles, is discussed.

3. Our experience with tracheotomy for this indication in 4 cases is reported. In our hands, this has proved to be a valuable procedure.

4. Comment is made upon certain other aspects of the problem of tracheobronchial obstruction and its sequelae, due to impairment of the cough mechanism.

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LUPUS ERYTHEMATOSUS DISSEMINATUS: REPORT OF A CASE IN A MALE

C. W. MORRIS, M. D.*

Disseminated lupus erythematosus is a chronic, frequently remittent disease, usually but not always characterized by a peculiar type of skin eruption, associated with severe constitutional symptoms which may be quite varied. The ultimate outcome is almost always death, but there are increasing reports in the literature of cases which have been followed a number of years and of a few instances in which the disease, though once present, can no longer be found.

Although lupus erythematosus may occur in the aged or even in childhood, approximately 95% of cases are found in women under 30 years of age. Over 40 years of age it is infrequent.¹ The etiological factor or factors remain unknown, but tuberculosis, exposure to sunlight, pregnancy, and an allergic reaction have been advanced as possible causes. Tuberculosis is now felt to be most unlikely. The earliest symptoms have not infrequently followed exposure to the sun; pregnancy is considered to be, at most, a contributing factor;² a hypersensitivity reaction, although denied by many writers, is again

suggested by observations on the "L.E." cell.³ It has also been observed that various infections and trauma seem to precipitate the disease.

Gross inspection of the tissues at post mortem may show nothing abnormal or possibly verrucous endocarditis of Libman and Sacks.⁴ Microscopic examination reveals "connective tissue changes in walls of small arteries in the renal glomeruli, the skin, the mediastinum, and in the subendothelial connective tissues of the endocardium, epicardium and other serous membranes."^{1,5}

Swelling of connective tissue, amorphous ground substance and fibrinoid degeneration of white or collagenous fibrils is present in involved areas. The collagenous fibrils are "swollen, straightened and matted together into conglomerate masses of homogenous refractile material which is intensely eosinophilic."⁵ As a result of fibrinoid degeneration of intracellular connective tissue, the principal morphological feature of lupus erythematosus, the pathologist may detect verrucous endocardial lesions, serous membrane involvement, wire loop appearance of kidney glomeruli, periarterial fibrosis of arteries of

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spleen, or fibrinoid changes of connective tissues of vessels.

Until recently no easily available laboratory procedure was afforded the practicing clinician and the diagnosis of lupus erythematosus engaged the interest of only the specialists in the fields of Dermatology and Internal Medicine. However, with the demonstration of the "L.E." cell by Hargraves,³ and subsequent investigation by Haserick and Sandberg⁶ who confirmed his findings and further indicated the specificity of the "L.E." cell in this disease, the general practitioner is now given a readily available laboratory procedure for the diagnosis of acute lupus erythematosus. As reported by Montgomery² all cases of acute lupus erythematosus so tested had "L.E." cells in bone marrow; in subacute forms of the disease only 3 out of 12 were positive, and no cells were discovered in the so-called chronic cases. It was felt that if the disease process was active or increasing the "L.E." cell could be found, but not if illness was of quiescent nature. Methods of producing the "L.E." cell have been described by many writers^{3, 6, 7, 8, 9} and consist mainly of making smears from the buffy coat of heparinized bone marrow aspirations or peripheral blood. These cells cannot be found in usual blood smears, but Lee⁸ has recently discovered that the "L.E." cell can be found in clotted blood and that its presence depends not on the use of anticoagulants but rather on the time that the blood remains outside of the body for its formation. Since Hargraves⁹ report in 1948 other observers have also demonstrated that when the serum of an "L.E." patient was incubated with bone marrow material of patients with various other diseases, the "L.E." phenomena could be produced. As first described by Hargraves, the "L.E." cell observed in heparinized bone marrow aspirations and peripheral blood smears of patients with acute lupus erythematosus was almost always a mature polymorphonuclear neutrophil which had apparently phagocytized a homogeneous mass of chromation which stained purple. (Fig. 2) Bergman, et al.⁸ found the inclusion phenomenon common in so-called band forms and its occurrence occasionally in monocytes, eosinophils and lymphocytes. Examples of some of the typical "L.E." cells are presented (Figs. 1 and 2) and quite excellent photomicrographs of the cells may be found in several articles.^{3, 7, 8}

The main diagnostic aids in the determination of this disease consist of both clinical and laboratory observations. The most striking clinical feature is the cutaneous eruption which is characteristically described as a redish-pink scaling dermatitis associated with epidermal thinning and some edema of skin. This may be found on any portion of the body, but classically is seen in butterfly distribution over nasal and malar areas of the face. Some cases may have no

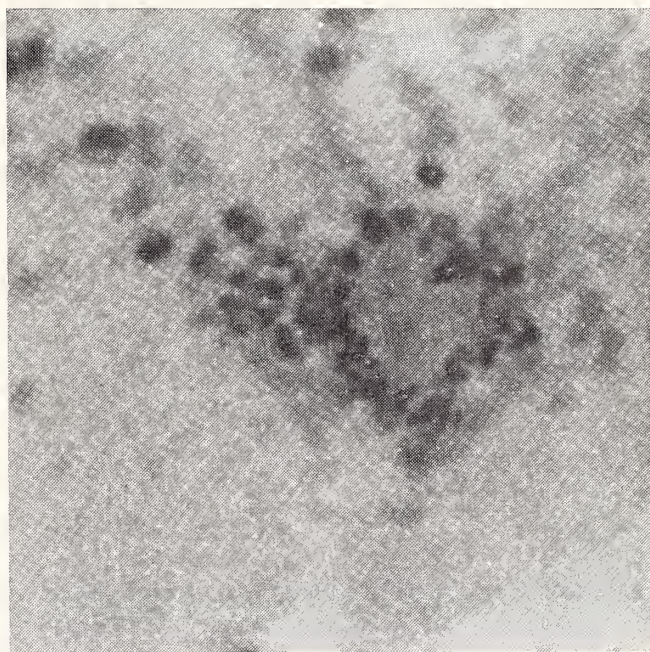


Fig. No. 1. Rosette formation in nuclear material surrounded by masses of altered cells. Buffy coat preparation. Wrights stain.

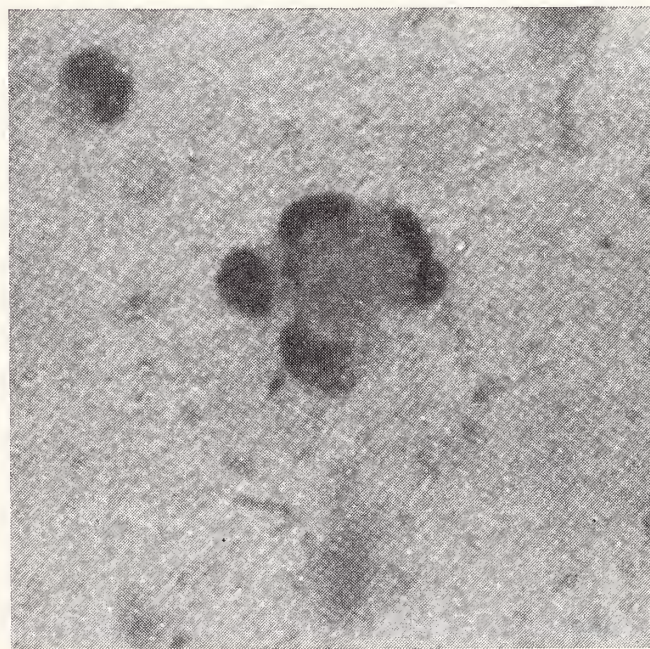


Fig. No. 2. Typical "L.E." Cell in buffy coat preparation —Wright's stain.

skin lesions whatsoever, making the diagnosis extremely difficult and others, in the acute phase of the disease, may present merely erythema, which may or may not involve the face. A multiplicity of clinical features such as fever, intermittent arthralgia, frank arthritis, joint effusions, excessive fatigue; symptoms referable to thorax or abdomen such as pleurisy, pericarditis, or even complaints simulating an abdominal emergency; marked renal involvement and

even the development of the nephrotic-like syndrome; central nervous system manifestations of diverse nature; or findings consistent with purpura hemorrhagica may dominate the picture. Patients who do not have skin involvement should be suspected of having the disease when presenting the following combinations:

- "1. Fever and leukopenia and hematuria.
2. Fever and arthritis, serous sac effusions and glomerulonephritis.
3. Fever and attacks of thrombopenic purpura hemorrhagica or combination of above features."

Through the years treatment has always been non-specific and generally supportive in nature. Various drugs have been tried without specific effect. Exposure to sunlight should be avoided as it has been found to aggravate the disease; patients should avoid excess physical exertion during periods of disease activity. Sulfonamides should not be used if at all possible as they have been found to aggravate the process. Recently ACTH and Cortisone have been found to have beneficial and even dramatic effect in this condition.

Despite remarkable remissions effected by the use of hormonal therapy, pathological reports on autopsied cases seem to prove that there has been no real morphological change in the disease process.^{10, 11} Wider use of ACTH and Cortisone in disseminated lupus and increasing reports in the medical literature seem to indicate that effects obtained may be spectacular of life-saving, but during treatment such side effects or hormonal therapy as weight gains or edema, hypertension, congestive failure, alkalosis, mental changes (even frank psychosis), convulsions, endocrinological effects, or even diabetes may result.

Brunsting¹¹ has cautioned that these drugs should be used only when careful, frequent laboratory tests can be made. With the discontinuance of drug therapy, a remission of the disease may have occurred, but relapse may be frequent and prompt; Soffer¹⁰ and Haserich¹² have found it necessary to continue patients on small amounts of hormonal drug in order to maintain previously induced remission.

Shortly following the institution of ACTH and Cortisone therapy, the presenting symptoms of the disease subside, the patient develops a sense of well being, and he is able to withstand strains and stresses which hitherto were disastrous in this disease.¹¹ Soffer¹⁰ found that arthralgia and fever subsided in two to four days, the mucosal lesions disappeared in a week and the skin eruption slowly faded over a period of two to four weeks; retinal changes and pleural effusions disappeared in one to two weeks, and pericardial effusion present in three of the fourteen patients in his series subsided after one to three weeks of therapy.

Dosage of ACTH and Cortisone for this disease seems to vary with the medical authors. Originally, ACTH was given intramuscularly in a dose of 40 to 100 mg. per day in divided amounts for a period of two weeks to 2½ months. More recently, increasing reports expound the use and value of intravenous ACTH—usually recommending 20 mg. of drug daily in 1000 c.c. of fluid given over an eight-hour period for varying number of days. Many feel that ACTH is of more value in treatment of this disease than is Cortisone, and it is felt that it is definitely more useful in the acute lupus crises.¹² Cortisone is usually administered intramuscularly or orally daily in a dose roughly paralleling (100 mg.) or slightly above (150-200 mg.) the amount used in various other diseases. When the patient goes into a remission, Cortisone is the drug of choice for maintenance therapy.

As has been pointed out, frequent laboratory data are necessary during hormonal drug therapy in order to avoid untoward side effects and further to follow intelligently the course of the disease. Of the fourteen cases so treated by Soffer¹⁰ the renal abnormalities, anemia, and thrombocytopenia, when present, remained unchanged. "L.E." cells, present in all instances upon initiation of therapy, disappeared in only one case; leukopenia persisted in six out of ten patients and the elevated ESR, a constant finding in all fourteen cases, decreased in ten patients, but returned to normal levels in only four. Other investigators have found a rise in the hemogram, and there has been an occasional report in the literature of a case in which the "L.E." cell disappeared while drug was being administered.^{12, 13} Renal involvement was not altered by Cortisone therapy in the seven cases reported by Brunstein;¹⁴ and Thorn¹³ reported that of all cases with severe renal involvement so treated only one had a normal urine following treatment. Gamma-globulin returned to normal during therapy, but fell to previous abnormally low level when the drug was discontinued;¹³ Bayles reporting five patients treated with ACTH found the gamma-globulin decreased by a significant amount in all instances and the two patients who had normal gamma-globulin values before treatment showed a drop to sub-normal values with an associated decrease of total protein in four. The eosinophil response, the most easily obtainable laboratory procedure providing suggestive evidence as to whether or not hormonal therapy will be effective, is not necessarily a satisfactory criterion of drug-disease-response relationship. Some patients, particularly the seriously ill, may show much less than the expected 50% drop in eosinophils following the administration of ACTH or Cortisone, and yet on the other hand, show marked improvement clinically.

Recently, the Medical Service of the Veterans Administration Hospital at Togus, Maine, has been

confronted with the diagnostic and therapeutic problems inherent in a case of disseminated lupus erythematosus in a male. The following is a case of this rare disease which has been treated with fair success with adreno-corticotrophic extract.

CASE REPORT

A twenty-three-year-old white male school teacher was admitted to ENT Department of this facility on July 6, 1950, for possible tonsillectomy because of a history of recurrent sore throats. Tonsillectomy was not considered necessary and as urinalysis revealed the presence of albuminuria he was, therefore, transferred to the Medical Service for complete check-up. Further perusal of his history revealed the story of intermittent arthritis for the past two years. He described migratory joint aches and pains lasting eight to forty-eight hours at a time which, at one time or another, involved every joint in his body. Not until the winter of 1949-50 was there associated erythema, heat, and swelling of involved joints and even then the arthritic process never persisted longer than forty-eight hours at a time. During this period, usually occurring at the time of joint involvement or even when he was excessively fatigued at the end of the day, he would experience transitory shaking chills, followed by feverishness of five minutes' duration always responding to rest without specific therapy. For one year the patient had noted a feeling of constriction in the lower thorax upon breathing deeply, yawning, and sneezing. He described three distinct episodes of nausea and vomiting during the previous year which occurred at times of excessive fatigue. Appetite had been only fair and he had lost thirty pounds of weight since September, 1949. There was no previous knowledge of albuminuria; no history of nocturia, frequency, or dysuria. Family history was interesting in that at least eight relatives in his mother's family have allegedly had albuminuria. Remainder of past history and system review was non-contributory.

Physical examination revealed a well-developed, well-nourished adult male who appeared to be quite well physically, was mentally alert, well-oriented and coöperative. Pertinent physical findings were as follows: Blood pressure 118/56; pulse 76 and regular. There was slight hyperemia of the posterior pharynx with small scarred tonsils. A moderate swelling of the left wrist without associated heat, redness, or limited motion was present. On forward flexion of the back, the fingers remained twenty inches above the floor because of patient's complaint of pain in knee joints when performing this maneuver. Palpably, freely movable, non-tender, not particularly remarkable lymph nodes were present in cervical and axillary regions. It was of note that skin was entirely normal.

It is interesting that on admission the only positive findings were WBC. of 5,000 per cm.m., with 65 neutrophils and 35 lymphocytes, an elevated erythrocyte sedimentation rate, slightly elevated blood urea nitrogen, and urinary abnormalities revealing the presence of albuminuria, microscopic hematuria and cylindruria. Uncatheterized urine cultures showed the presence of streptococcus and staphylococcus without hemolysis on blood agar. Evidently this was a contaminant as catheterized urine cultures were negative. Within several weeks following admission there developed progressive anemia reaching 2.94 million RBC. and 11.2 gms. of hemoglobin, increasing elevation of the erythrocyte sedimentation rate to 105 m.m. per hr. in October, 1950, a 1:1 A/G ratio, and a return to normal of the blood urea nitrogen. Urinalysis revealed increasing albuminuria, casts and red cells, and determination of 24-hr. urinary total protein excretion showed considerable variance — 220 meq./Liter in September, 1950, to 140 meq./Liter in October, 1950. Phenol-sulfothalein test was normal, 27% in 15 minutes, and Fishberg urine concentration test never revealed concentrations equal to the isolated urine examination which on several occasions demonstrated satisfactory kidney concentrating mechanism (specific gravity 1.030). Various tests for blood calcium, cold agglutination, cryoglobulins, blood uric acid, Lee White Coagulation Time, prothrombin time, blood culture, bromsulfalein excretion, throat culture, reticulocyte count, platelet count, agglutination tests for typhoid, paratyphoid, Brucellosis, skin tests for various allergies, malaria smear, feces for blood, ova parasites, and 17 Ketosteroid excretion were not remarkable.

In August, 1950, biopsy of the left gastrocnemius muscle revealed normal striated muscle, and examination of synovial fluid obtained from effusion of the right knee joint showed WBC. 4,400 with 90 lymphocytes and 10 polys. Culture of synovial fluid revealed no growth. Biopsy of a right inguinal lymph node was reported as showing chronic lymphadenitis, non-specific.

Roentgenological examination of heart, lungs, entire spine, pelvis, hands, hips, knees, ankles, feet, KUB, I.V. Urograms and retrograde urograms showed no abnormalities.

During August, 1950, it was discovered that the Rumpel Leede test was positive and this finding has persisted throughout the 18 months this case has been followed, being possibly less pronounced during a period when rutin was administered.

The persistently negative serology is of note since a false positive result has been reported by many authors as being one of the suggestive laboratory diagnostic criteria in this disease.

On October 25, 1950, a heparinized sternal marrow revealed cells typical of the so-called "L.E." cell

of Hargraves. Heparinized buffy coat of peripheral blood also revealed a scattered few, but typical, "L.E." cells. The patient's serum was mixed with the buffy coat of bone marrow of another patient and typical "L.E." cells were produced.

During the course of ACTH therapy the hemogram returned to normal, white blood counts which had been low normal, became normal (8900 to 10,100 with 79 polys, 20 lymphocytes and 1 monocyte), erythrocyte sedimentation rate dropped gradually to within normal range (2 m.m. per hr.) and A/G ratio became normal. Frequent determinations of fasting blood sugar, CO₂ combining power, blood chloride and electrocardiograms taken at the time of ACTH administration showed no change. Although the BUN dropped shortly after admission to within average range and remained there upon subsequent determinations, the urine showed persistent albuminuria, hematuria, and casts.

Most recent laboratory examinations in January, 1952, revealed excellent values for complete blood counts (RBC. 4.2 million, WBC. 6,000 with 71 polys, 23 lymphocytes, 4 monocytes, 2 eosinophils), and total protein of 6.4 gms.; the erythrocyte sedimentation rate was elevated (44 m.m. per hr.) and urinalysis unchanged. Bence Jones protein was found to be present in the urine. Heparinized peripheral blood still revealed the presence of "L.E." cells.

HOSPITAL COURSE

During first four months of hospitalization this healthy-appearing white male had a frequent temperature elevation of 99° or 100°, continued to complain of a constricted feeling across the lower thorax on coughing, sneezing, or taking a deep breath, had rare episodes of nausea and vomiting; experienced transitory joint aches, pains and stiffness involving mostly fingers, wrists, shoulders, knees, ankles, and feet; developed intermittent but definite swelling of various interphalangeal joints and the dorsal aspects of hands associated with slight heat and redness, which never persisted for more than 24 hours at a time; was beset with a painful nonerythematous but slightly warm effusion of right knee which continued over a period of approximately one month; and developed a conjunctivitis of the left eye which lasted only a few days, subsiding with saline soaks. Occasionally a blotchy erythema of face and upper anterior thorax, never lasting more than a few hours at a time, was observed. Throughout this period, because of the obvious nephritic process, the patient spent most of the time in bed on low protein, low-salt diet, lost weight from 167 to 145 lbs., complained frequently of ill feeling and began to appear chronically ill. Laboratory examinations showed a progressive anemia, rising erythrocyte sedimentation rate, and abnormal A/G ratio; albuminuria, hematuria and cyl-

indruria, as well as positive Rumpke Leede test persisted. On October 25, 1950, "L.E." cells were demonstrated in heparinized buffy coat of both bone marrow aspirations and peripheral blood.

Because of gradual downhill course and some evidence in the literature of striking response of this disease to ACTH, a course of this drug was administered over a period of two months. With a dose of 20 mg. of ACTH (ARMOUR) given intramuscularly every 6 hours there developed increased appetite, weight gain, and a general feeling of well-being. Joint swellings, aches, pains and stiffness subsided and transient erythema over face and thorax together with constriction of lower thorax on deep breathing, yawning or sneezing did not occur. With the exception of persistent "L.E." cells, positive Rumpke Leede test, and urinary findings, laboratory examinations returned to normal values. Certain signs of Cushing's disease such as moon facies and acneiform rash over the face, chest, and upper extremities developed.

While on hormonal therapy the patient continued to remain at bedrest on low-sodium, low-protein diet with 6 gm. of potassium chloride administered daily. As has been observed, no electrolyte imbalance was produced by this treatment. ACTH was gradually diminished over a 6-day interval and for a period of three days following complete cessation of therapy, the patient had an intermittent temperature of 101°, was lethargic, anorexic, lost 5 pounds of weight, and passed dark red urine containing many RBC's on several occasions. Over the next two weeks his general condition dramatically improved, he felt well, appetite returned, and lost weight was regained. Within a few weeks following discontinuance of hormonal therapy there was a recurrence of intermittent, vague joint pains and tenderness unaccompanied by swelling and a suggestion of constricted feeling in lower thorax at times of yawning or breathing deeply, however, not nearly as severe as prior to ACTH treatment. Because of general feeling of well-being, paucity of symptoms, lack of abnormal physical findings, and despite slightly elevated erythrocyte sedimentation rate and persistence of urinary abnormalities, the patient was subsequently discharged from this facility in March, 1951, and was returned only for observation at varying intervals. On the whole, general improvement has been maintained and he is currently doing substitute teaching and taking correspondence courses. The most recent interview was in February, 1952 (19 months after patient was first hospitalized) and at that time he complained of easy fatigability in afternoon; rather vague mild soreness in joints, perhaps 1-2 days a week; occasional stiffness of feet and fingers; rare non-painful, non-erythematous swellings of dorsum of wrists and hands (this occurring approximately once a month); and a vague feeling of discomfort in the lower thorax on taking a deep breath. A rather careful system review

at this time failed to reveal any other complaints. Physical examination of this apparently healthy male was not remarkable except for considerable soreness to palpation over the left 5th metacarpophalangeal point. The patient continues on a low-salt, low-protein diet, and apparently has had no intercurrent infection since treated with hormonal therapy. He has been instructed to consult his local physician and receive antibiotics if he develops any infectious disease.

DISCUSSION OF CASE

In retrospect, this case should probably have been diagnosed earlier, but the fact that lupus erythematosus rarely occurs in males (about 5%), and the absence of skin involvement tended to be misleading; also, the not too remarkable physical examination, and the finding of certain normal laboratory values on hospitalization (normal initial hemogram, absence of leukopenia, normal initial total protein and A/G ratio, and negative serology) served to obscure the true diagnosis. Despite the eventual finding of a widely disseminated disease process as evidenced by joint, kidney, hematological and vascular involvement (positive Rumpel Leede test in the presence of a normal platelet count), the diagnosis would still be obscure in this patient if the "L.E." cell had not been demonstrated. The presence of transient erythema over face and thorax, and the peculiar type of thoracic distress were most certainly of diagnostic significance, but inconclusive in themselves.

The patient's immediate response to ACTH therapy, and his continued improvement while under treatment were not at all unusual. The transitory exacerbation of the disease process which occurred upon cessation of therapy was unusual in that it did not persist, and that a complete exacerbation of the clinical and laboratory findings of lupus erythematosus did not again become evident.

The maintenance of normal hemogram, white count, total protein and A/G ratio following hormonal treatment differs from the findings in the usual reported cases in the literature. A report of the presence of Bence Jones protein in the urine has not come to the author's attention while reviewing the subject. Its significance and cause, while much debated in other diseases in which it may be found, is unknown.

It is felt that this patient has entered what would be considered a fair state of remission which has been maintained over a rather prolonged period of time without the aid of maintenance hormonal therapy; and it is believed that administration of ACTH produced the remission. However, cognizance that this disease process is prone to frequent and even prolonged spontaneous remissions, precludes absolute faith in one's belief.

SUMMARY

A brief presentation of the clinical and laboratory aspects of disseminated lupus erythematosus with a discussion of the use of the new hormonal drugs in this disease has been tabulated.

A case report of a male patient without skin involvement diagnosed by finding the recently discovered "L.E." cell, and treated with ACTH has been reported in detail. Unusual features of this case have been set forth.

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Local Society Decals—Here's an idea for local societies who want to dress up the new office plaque designed by the American Medical Association to encourage mutual understanding between physicians and patients. Local groups may have decals made up indicating that the doctor is a member of his respec-

tive county medical society. Such a message would show patients that the local medical society is co-operating with the national Association in the campaign for creating better understanding between patients and doctors.

ACUTE TUBERCULOUS PERICARDITIS

Report of a Case

J. B. DANA, M. D.*

When pericarditis occurs as the primary clinical manifestation of tuberculosis, it has been asserted that the prognosis is grave. Clinicopathological studies have established the viewpoint that this relatively rare complication usually arises by extension from a neighboring tuberculous focus, most commonly from hilar lymph nodes. Of less importance is hematogenous seeding of the pericardium in miliary tuberculosis. Primary invasion of the pericardium is extremely rare if it occurs at all.

It may be difficult, at times, to diagnose acute tuberculous pericarditis since there may be few subjective disturbances associated with the acute stage. Usually, however, the disease is characterized by a prolonged course, exhibiting in the acute stage, chills, sweats, fever, tachycardia, dyspnea, increased sedimentation rate, leukocytosis, anemia, friction rub and pericardial effusion that may cause cardiac compression and vena caval compression. The effusion may persist or it may subside and be followed by symptoms and signs of constrictive pericarditis.

Thus pericarditis of tuberculous origin may pass through four stages: (1) the dry stage; (2) the stage of effusion; (3) the stage of absorption; and (4) the stage of pericardial constriction due first to a thickened granulomatous pericardium which then goes on to dense fibrosis. Only rarely is the entire natural history of clinically primary tuberculous pericarditis observed in a single case. Arrest or cure of the disease may occur before the stage of effusion or after the stage of absorption, or death might supervene early in the course.

In a series of fifty-three cases of constrictive pericarditis seen at the Massachusetts General Hospital and in the private practice of Dr. Paul White, tuberculosis was the proved etiologic agent in seventeen percent. In other series the incidence of tuberculosis as the causative factor in constrictive pericarditis is higher. The English believe that tuberculosis is the chief cause of constrictive pericarditis, at least in England. According to Andrews it is the rule for constrictive pericarditis to develop as tuberculous pericarditis heals and no other form of acute pericarditis heals in this way. In keeping with this viewpoint, it is of some interest that in the Massachusetts General series previously mentioned symptoms and signs of constriction of the pericardium developed much more rapidly in cases of tuberculous etiology

than they did in cases where the etiology was obscure. Peel believes that the incidence of tuberculous pericarditis has been greatly underestimated.

I wish to report briefly a case of acute tuberculous pericarditis followed almost from its inception through the stage of constriction and to make a few remarks on present trends in the treatment of this condition and its sequelae.

CASE REPORT

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This 25-year-old office worker entered the hospital 16 June, 1950, complaining of fever and headache of several weeks' duration. Patient was essentially well until mid-April, 1950, when he began to have occasional occipital headaches, associated with aching and stiffness in the neck. These headaches often occurred in the morning after arising and recurred in the evening. The headaches persisted intermittently until the latter part of May, 1950, when they began to increase in severity and in duration, and became less susceptible to treatment with aspirin. About mid-May, 1950, the patient noted associated weakness and fatigue. He continued to work however, until the 2nd of June, 1950, when he was seen by his local physician who could find no explanation for the headaches. The patient was seen by a second physician who felt that the headaches were on the basis of nervous tension in view of the fact that physical examination was within normal limits. On the 3rd of June, however, the patient felt feverish and for the first time was found to have a temperature elevation to 102 degrees. Because of persistent elevation of temperature, hospitalization was advised. Patient was hospitalized at another hospital where blood cultures, chest X-rays, X-rays of the skull and a lumbar puncture were carried out. All of these tests were said to have been within normal limits except for the electrocardiogram. At the time of admission to that hospital a heart murmur was noted by the patient's physician. There had been no previous history of any cardiac abnormality, but because of the patient's fever and despite the negative studies, he was given eighteen injections of penicillin without significant change in his physical status or symptomatology. His headaches and fever persisted until a week prior to admission to this hospital when

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they subsided and then disappeared completely. He denied any joint symptoms. He stated that he had had chilly sensations but no frank chills, and he denied drenching night sweats. He denied recent respiratory infection of any sort and denied the ingestion of unpasteurized milk or exposure to any known sources of infection. Health of the patient's family was said to be excellent. He denied shortness of breath, orthopnea, paroxysmal dyspnea and peripheral edema. He said that since June of 1950 his appetite had been poor and that there had been a significant though undetermined amount of weight loss. Past history and system review were not contributory and family history was not contributory.

Physical examination at the time of admission to this hospital on June 16, 1950, revealed a thin well-developed, young, white male appearing acutely and chronically ill. The lungs were clear to percussion and auscultation. The left border of cardiac dullness was percussable at the anterior axillary line and there appeared to be cardiac enlargement to the left up to the level of the third interspace. There was also suggestive widening of the area of mediastinal dullness. The heart rate was rapid, the sounds were distant and of poor quality. P₂ was moderately accentuated. With the patient in the supine position there was heard close to the sternal border in the fourth left interspace a pericardial friction rub. There was a well-healed scar in the sacral area. Blood pressure was 100/50 and pulse rate was 124. Temperature was 102.8 degrees. The remainder of the physical and neurologic examination was within normal limits. At the time of admission the white blood count was 9100 with 78% neutrophils, 17% lymphocytes, 3% monocytes and 2% eosinophils. Initial urinalysis showed a specific gravity of 1026 with 1 plus albumin and a few white blood cells per high powered field. Serology was negative at the time of admission, and agglutinations for typhoid, paratyphoid, brucella and heterophile agglutination were all negative. Subsequent white blood counts were all within normal limits, in the vicinity of 6800 to 9500, and differential counts were essentially normal. Liver function studies shortly after admission showed 30 to 45% retention of bromsulfalein after dose of 5 mgms. per kgm. with the determination being made in 45 minutes. The total protein was normal with a normal albumin-globulin ratio. BUN was normal. Test for cold agglutinins was negative. Numerous blood cultures were all negative. Pericardial fluid was amber in color. It showed a total protein of 2.1 gms. percent, a white count of 2000 with a predominance of lymphocytes, and the fluid was negative on smear for both pyogens and acid-fast bacilli. Culture of the pericardial fluid was positive for tubercle bacilli. Initial X-ray examination of the chest on June 17, 1950, showed a globular shaped heart which was enlarged

and which was thought to be compatible with pericardial effusion. Initial electrocardiogram taken on June 17, 1950, showed STT segment changes compatible with pericarditis and/or myocarditis. Numerous subsequent electrocardiograms showed no significant change in this picture. At the time of admission to the hospital it was felt that this patient might have acute rheumatic fever with rheumatic carditis. Following admission the patient showed a persistent elevation of temperature early in his course with fluctuations between 99 and 104 degrees. Because of the X-ray evidence suggestive of pericardial effusion, a pericardial aspiration was carried out June 30, 1950, and 120 c.c. of amber colored fluid was withdrawn. This fluid, as previously stated, was negative on smear for pyogens and acid-fast bacilli and had on laboratory examination the characteristics of a transudate. Because of the seriousness of the patient's condition, it was decided to give him a trial of therapy with penicillin and this was carried out without any change in his general status. The patient was then given a course of aureomycin therapy by mouth and then by intravenous injection, again without any improvement in his general status. His appetite continued to be poor and his course appeared to be progressively downhill. A tuberculin test was carried out shortly after admission and was strongly positive in a dilution of 1 to 10,000. With this finding and because of the patient's prolonged course and his failure to respond to ordinary anti-biotic therapy, the possibility of tuberculous pericarditis with effusion was strongly considered early in July of 1950. For this reason, on July 11, 1950, despite the absence of an etiologic diagnosis, the patient was started on therapy with streptomycin in the dosage of 2 grams daily. Shortly thereafter the culture of the pericardial fluid was reported as positive for tubercle bacilli, and the diagnosis of tuberculous pericarditis with effusion was established. At this time para-aminosalicylic acid in the dosage of 12 grams daily was added to the therapeutic regimen. On August 24, 1950, repeat X-ray examinations showed a decrease in the width of the cardiac shadow and there was noted some residual pleural change at the left costophrenic angle and a small pleural effusion at the left base. Patient's clinical condition continued to be grave. He was dyspneic on even minimal exertion. His appetite remained poor, and his weight which had been 160 lbs. prior to the onset of his illness had fallen to 124 lbs. The patient continued to show wide daily swings of temperature. About mid-August of 1950 the patient developed signs of pleural effusion on the right and thoracentesis was carried out. The chest fluid was cloudy and purulent in appearance, but laboratory studies failed to reveal tubercle bacilli in the chest fluid either on smear or culture, and the laboratory reports suggested a trans-

update rather than an exudate despite the appearance of the fluid. By August 15, 1950, the patient's temperature chart showed a definite downward trend, and from that time on there was only an occasional elevation of temperature to 100 or 101 degrees. Intermittent pericardial and pleural friction rubs were heard through the summer and early fall of 1950. All laboratory studies with the exception of the sedimentation rate and bromsulfalein test were within normal limits. In September of 1950 the patient's appetite had begun to improve and he had no significant complaints. Physical examination at this time showed intermittent pericardial friction rub, an intermittent pleural friction rub on the left, and a persistent tachycardia. By this time the patient was afebrile and remained afebrile from September, 1950, to the termination of his hospitalization. From time to time the patient complained of intermittent pleuritic type pain on the left and occasional headache. Because of recurrence of this complaint of headache, a lumbar puncture was carried out in September, 1950, and the findings were completely within normal limits. Repeated determinations of the venous pressure and circulation time were carried out through September, 1950, and these determinations were all within normal limits. However, in early October, 1950, it was noted for the first time that the patient had cyanosis of the face and neck, and venous pressure determination at this time was found to be elevated to 32 cm. of saline. Circulation time however remained within normal limits. Since October, 1950, this patient's venous pressure has been persistently elevated varying between a high of 32 cm. of saline and a low of 18 cm. of saline. At about this time pulsus paradoxus was noted for the first time. It was felt that these findings were compatible with a diagnosis of constrictive pericarditis. On October 19, 1950, it was noted that liver edge was percussable 2 fingerbreadths below the right costal margin and shortly thereafter the tip of the spleen became easily palpable. Liver function studies at this time showed 30 to 50% bromsulfalein retention at the end of 45 minutes after a dose of 5 mgms. per kgm. of bromsulfalein. There were no other significant abnormalities of liver function, and it was thought that this abnormality was the result of hepatic congestion. From October, 1950, to the termination of the patient's hospital stay in June, 1951, sedimentation rate, red count, hemoglobin, hematocrit, white blood count and differential count were all within normal limits on repeated determinations. Towards the end of October, 1950, physical examination showed dullness to flatness over both lung bases, but more extensive over the right posterior chest than over the left. There was an audible pleural friction rub over the right anterior chest, and there was diminution of voice and breath sounds over both lower lung fields. Fluoroscopic examination at this time suggested an encapsulated,

pleural effusion at the left base, marked pleural retraction on the right without pleural effusion, and probable constrictive pericarditis manifested by marked diminution of the amplitude of cardiac pulsations. Early in November, 1950, the patient's therapeutic regimen was changed to 1 gm. of streptomycin twice weekly and 12 gms. of para-aminosalicylic acid daily. Late in 1950 thought was given to the question of pericardiectomy in view of the persistent evidence of constrictive pericarditis. It was decided at this time that the patient should have catheterization studies prior to the making of any decision concerning surgical intervention. By the beginning of 1951 the patient's weight had increased to 141 lbs. He was still afebrile, and sedimentation rate and other laboratory studies were essentially within normal limits. On February 5, 1951, the patient noted a gurgling sensation in the right chest on change of position, and X-ray examination at this time showed evidence of a right hydropneumothorax. The left lung field was clear with the exception of some pleural thickening at the left base. On February 8, 1951, a right thoracentesis was carried out and 500 c.c. of thick milky fluid were withdrawn. The fluid was negative on smear; and culture for both pyogens and acid-fast bacilli was negative. The white cell count was 300 with the majority of the cells being polys, and the specific gravity of the fluid was 1017. On staining of the sediment with Sudan III there was an insignificant number of fat droplets. The protein content of the fluid was 5.8 gms. percent. It was felt that this was a chyloid effusion. This effusion despite its character, was not considered to be evidence of any active tuberculous process. Plans were then completed for transfer of the patient to the Newington Veterans Hospital for catheterization studies, and these studies were carried out in March, 1951. The results of the catheterization studies were interpreted as showing a normal cardiac output at rest with a fall rather than a rise in output on exercise. The patient's oxygen consumption was increased on exercise by a widening of the arteriovenous oxygen difference rather than by an increase in cardiac output. The pulmonary artery and right ventricular pressures were both elevated with this elevation being particularly in the diastolic and mean pressures. The right auricular pressure was elevated and there was a loss of the peripheral pressure gradient. These findings were thought to be consistent with heart failure due to constrictive pericarditis. Shortly after these catheterization studies, venous pressure determination showed a venous pressure of 25 cm. of saline. The patient was then returned to Togus Veterans Administration Hospital and again the problem of whether or not pericardiectomy should be carried out was discussed. It was decided that since the patient showed no evidence of progressive constriction with the difficulties incumbent upon such pro-

gression, and since he did have a chyloid pleural effusion which had been present at least from February, 1951, that it was best to delay surgical intervention until there was absolute certainty that no active tuberculous process was present. The patient remained on streptomycin therapy, 1 gm. twice weekly, and para-aminosalicylic acid therapy, 12 gms. daily until June, 1951, approximately one year after the onset of his illness and the institution of therapy for his illness. By June, 1951, patient had no complaints. His venous pressure was still elevated, but his sedimentation rate, white count and differential, red count, hemoglobin and hematocrit were all within normal limits. A repeat chest tap was carried out March 16, 1951, and 420 c.c. of milky fluid were withdrawn. The character of the fluid was the same as it had been in February, 1951. It was again the feeling that this represented a chyloid effusion rather than chylothorax or tuberculous empyema. Cultures and smears for tubercle bacilli were negative. The patient was discharged from the hospital on June 29, 1951, with the feeling that his tuberculous process was inactive but that he did have constrictive pericarditis secondary to tuberculous pericarditis and that surgical intervention would at some time be necessary in the future. Since June, 1951, the patient has been seen on three occasions for follow-up studies. He has had no complaints that might suggest active tuberculous disease, and on the basis of venous pressure determinations there is evidence to suggest progression of the constrictive pericardial process. There have also been no signs to suggest such progression. The chyloid pleural effusion on the right has persisted without evidence of increase in amount and the patient has no symptoms referable to this effusion. Repeated cultures of this fluid have again failed to show tubercle bacilli. The patient has been able to return to his sedentary occupation without the development of any untoward signs or symptoms.

At the present time two years have elapsed since the onset of this patient's symptoms and eighteen months since clinical evidence compatible with quiescence of the disease process has been present. It is now ten months since treatment with para-aminosalicylic acid and streptomycin has been discontinued and the status of the patient's general health appears to be excellent though he has clinical and laboratory evidence of constrictive pericarditis.

TREATMENT

Streptomycin is of prime importance in modifying previous concepts as to treatment and prognosis of tuberculous pericarditis.

Falk and Ebert reviewed twenty-one cases of proved tuberculosis of the pericardium all of which had circulatory failure manifested by elevated venous pressure. Symptoms of circulatory failure improved

or disappeared after treatment with streptomycin was started, in eight of seventeen cases. Streptomycin did not prevent the onset of tuberculous complications in a number of their patients receiving primary streptomycin treatment. These complications included tuberculous meningitis, miliary tuberculosis, tuberculous abscesses and tuberculous adenitis. The most disappointing aspect of streptomycin treatment was the failure of the antibiotic to prevent tuberculous complications, some of which were fatal. The difference between the incidence of improvement in cases under medical management and treated with streptomycin and those without streptomycin suggests that streptomycin may decrease the incidence of constrictive pericarditis, but does not have as great an influence on mortality. In this series there was no spread of tuberculosis following surgery for the disease process, in any case.

Carroll reviewed a series of five cases of tuberculous pericarditis treated with streptomycin and seventy-one untreated cases. Of the five treated cases, one was asymptomatic after four months of treatment, one died in two weeks and three developed signs of constriction. In these three, early corrective surgery was made possible by streptomycin treatment. He felt that the important factors in recovery were (1) early institution of therapy and (2) the continuation of bed rest and streptomycin for long periods after surgical correction of constrictive pericarditis. The principle value of streptomycin in these cases lay in its ability, in adequate dosage, to prevent dissemination of tuberculosis.

Myers and Hamburger reported the treatment of three cases of tuberculous pericarditis with streptomycin. They found that the duration of fever was less in the treated than in untreated patients and the treated cases, in general, have done better clinically over a longer period of time. The venous pressure which had been elevated in all three cases fell to normal in all.

Untreated patients with clinically primary tuberculosis of the pericardium may follow widely divergent courses. They may die early either of congestive failure or of miliary spread of the disease which takes place at the time of pericardial involvement. The course may be more protracted terminating finally in extensive pulmonary or miliary tuberculosis. Finally the patient may show spontaneous healing of the pericarditis only to return months or years later with tuberculosis in some other part of the body but with no evidence of active pericardial tuberculosis.

All observers feel that streptomycin administration improves the prognosis in cases of tuberculous pericarditis. However, the results of cases treated in the Veterans Administration as reported by Falk and Ebert show that streptomycin is by no means universally effective. The ultimate evaluation of strepto-

mycin in the treatment of this condition must await the accumulation of more data and longer follow-ups, and must be made with caution since the disease is complicated and has a variable clinical course. Continued experience with streptomycin has indicated the greater efficacy of prolonged treatment in most cases of pulmonary and extrapulmonary tuberculosis. The addition of para-aminosalicylic acid has decreased the rate of emergence of resistant tubercle bacilli and this promises to improve therapeutic results.

In May of 1951, Holman and Willett reported four cases of active tuberculous pericarditis in which the patients were either cured or markedly improved by pericardiectomy. Those authors believe that at the moment a diagnosis of cardiac compression can be made in a case of presumed tuberculous pericarditis, an operation should be considered regardless of whether this compression is noted in the stage of pericardial effusion or pericardial constriction. They feel that this would provide early liberation of the heart from the adverse mechanical effects of the disease and would permit a more efficient combating of the inflammatory component. Technically, excision of the pericardium is simpler in the stage of effusion and also at this time there is greatly reduced involvement of the myocardium. It is recommended that any patient suspected of having tuberculous pericarditis and being considered for pericardiectomy should be given streptomycin preoperatively and post operatively over a long period.

This point of view which recommends surgical treatment for signs of constriction even in the active phase of the disease was put forth by Blalock and Levy as far back as 1937 and Andrews et al. in 1948 and may now command more attention with the ready availability of streptomycin and para-aminosalicylic acid.

CONCLUSIONS

Though tuberculous pericarditis is not a common disorder, it has in the past had a generally poor prognosis. Now with efforts being made to establish the diagnosis earlier and with the availability of streptomycin and para-aminosalicylic acid, and with better understanding of the proper application of these agents, it may well be that the prognosis will be much less depressing. In addition, the restatement of the principle of early surgical intervention in active disease under the protection of streptomycin and para-aminosalicylic acid, and the improvement in surgical techniques offer further hope for marked improvement in therapeutic results. Final evaluation of both medical treatment with the newer drugs and surgical treatment plus the newer drugs will come only with the passage of time.

SUMMARY

A case of active tuberculous pericarditis from its onset through the stage of pericardial constriction is reported. Briefly the pathogenesis of the disease, its course, its prognosis and newer methods of treatment are discussed. The final decision as to the efficacy of these newer methods of treatment must await the passage of time.

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Student AMA Grows

Three new chapters have applied for membership in the Student American Medical Association, bringing the total number of active and provisional chapters to 47. The new groups are located at Western Reserve University, the University of Southern California and the State University of New York at Brooklyn. Organizational plans are being developed at other schools, including Northwestern, Vanderbilt, Tennessee, Cincinnati, New York Medical College, Iowa, North and South Carolina, Minnesota and West Virginia. Recently, the SAMA's executive council voted to change the annual meeting date from December to June, effective with the 1953 meeting.

New Physical Laboratory

Latest addition to AMA headquarters in Chicago is the new physical laboratory which was opened last month for testing of devices submitted to the Council on Physical Medicine and Rehabilitation. Dr. Fred-eric T. Jung, director of the laboratory, says that the majority of the laboratory's work is concentrated on testing actual mechanics of new devices submitted by manufacturers to the Council. This supplements the clinical testing which will continue to be done by practicing physicians who coöperate with the Council in this way. The results of physical and clinical testing are referred to the Council for evaluation and approval.

GASTROSCOPY: AN IMPORTANT DIAGNOSTIC PROCEDURE

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Gastroscopy is a valuable adjunct in the differential diagnosis and management of gastric disease. This type of endoscopy is a safe procedure and patients rarely refuse repeated examinations.

This represents a long step from use of the first rigid gastroscopose of Kussmaul in 1868 and Mikulicz in 1881. It has been made an easy clinical examination with the development of the flexible gastroscope by Schindler and Wolf in Germany in 1932. Benedict was the first person in the United States to use the flexible gastroscope, and in 1934, Schindler¹ began his American teaching of the subject in Chicago. Since then, this procedure has been added to the diagnostic armamentarium of most gastro-intestinal clinics and is freely used by the gastroenterologist in conjunction with X-ray, laboratory studies and his clinical judgment.

Gastroscopy owes much of its fascination and value to the ability to see the living stomach in its normal and many abnormal states. The introduction of the instrument is not exceedingly difficult, but interpretation of what is seen requires experience. Repeated examinations are sometimes necessary to follow a particular lesion or to confirm a strong suspicion of disease offered by collateral studies.

Negative gastroscopic reports, like negative X-ray reports, must be tempered by clinical judgment. Usually the gastroscopist cannot see the full lesser curvature of the antrum, a narrow strip along the posterior wall, the extreme lower pole, and at times the fornix of the stomach. Important lesions can occur in these areas. Despite the acknowledged deficiencies due to these blind areas, we have been impressed by the varied ways in which gastroscopy has aided in the management of gastro-intestinal problems. Because of this we feel that it is a procedure which should be used without hesitation when indicated. There are a number of absolute and relative contraindications to the use of gastroscopy. If these are respected, accidents should be very rare.

Although esophageal perforation, gastric perforation and peritoneal emphysema have been reported elsewhere, gastroscopies have been done at Togus without untoward incidents. Rare severe sensitivity to Pontocaine application is an ever present hazard.

The absolute contraindications to gastroscopy are:

1. Non-coöperation of the patient.
2. Obstruction of the esophagus or cardia. Preliminary barium swallow is necessary, though even then obstruction at the cardia may be overlooked.

We have just seen a case in which X-ray of the cardia was normal, the Ewald tube was easily passed into the stomach, but the gastroscope met resistance at the cardia. With gentle technique a catastrophe was averted and a diagnosis of carcinoma involving the cardia was made by inference, even though the scope did not enter the stomach. Carcinoma was proven at operation.

3. Aneurysm of the descending aorta. Preliminary X-ray of the chest preferably with an oblique view will obviate the rupture of such a lesion as it encroaches upon the esophagus.

4. Acute corrosive and phlegmonous gastritis.

Some of the relative contraindications are:

1. Acute tonsillitis and pharyngitis.
2. Coronary disease. If the patient is warned that angina may occur, and is given nitroglycerine preceding the examination, then it may be carried out with impunity.
3. Dyspnea from any cause may make the procedure more difficult and unpleasant, but not impossible.
4. Cardiospasm. Care must be taken to prevent rupture of the thin walled esophagus.
5. Pulsion diverticulum. It is best not to gastroscop these cases, although with care, it is said to be possible.
6. Esophageal varices. Although this is not an absolute contraindication to gastroscopy and should not be a deterrent in an urgent case, we have preferred to *esophagoscope such patients. If this examination is negative, it is promptly followed by gastroscopy.
7. Kyphosis and Scoliosis. If severe, it may not be possible to carry out gastroscopy.

Schindler states that the indications for gastroscopy may be summarized in one sentence: "Gastroscopy is indicated if a chronic stomach disease is suspected and if complete examination, including X-ray, has revealed only doubtful findings or no pathology at all."

During the past year there have been 108 gastroscopic examinations at Togus. A representative group of these cases may be cited as examples of the value of gastroscopy.

UPPER GASTRO-INTESTINAL TRACT BLEEDING

Gastroscopy is used in patients with upper gastrointestinal tract bleeding who are out of shock and

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when the cause of bleeding is in doubt after careful history, physical examination, early G.I. series (usually within 12-48 hours) and negative esophagoscopy

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(not done unless varices are suspected).

W. F. This 66-year-old man was hospitalized three days after a massive upper gastro-intestinal hemorrhage with hematemesis. The day before this episode he passed black stools but denied epigastric distress or excess alcoholic intake. It was not until 10 days later that it was learned from his wife that he drank heavily and had been consuming large amounts of soda for epigastric distress. On admission he was pale but not in shock. The blood pressure was 140/80. RBC. 2.3 million; hemoglobin 6 grams; WBC. 21,000; prothrombin time 46%; stool 4 plus guaiac; bromsulfalein 5% retention in 45 minutes. He received 2500 c.c. of blood within 48 hours and the hematocrit rose to 37% by the third day. Since he was not in shock, a G.I. series was done on the second hospital day using the Hampton² technique. No site of bleeding was found. His condition remained stable and gastroscopy was done on the fifth hospital day. A lesion was found proximal to the angulus on the lesser curvature. It exhibited a raised nodular sloping edge with a depressed center containing adherent mucus. Because it was viewed tangentially the whole ulcer edge could not be seen; thus an absolute differentiation between malignant and benign ulcer could not be made, though it was thought to be benign. A patch of hypertrophic gastritis was found. A repeat X-ray at this time revealed no gastric lesion. A repeat gastroscopy was done on the seventh hospital day. At this examination a nearly complete view of a sharp marginal shallow ulcer was seen. It was thought to show some healing and its position was placed at the angulus. The patient was transferred to surgery and an elective partial gastrectomy, Bilroth type I, was performed on the twenty-fifth hospital day. A shallow ulcer measuring 2.2 x 1.8 cm. was present midway on the lesser curvature toward the posterior wall. Mild hypertrophic gastritis was present. Patient was discharged in three months following a period of observation and leave of absence. He was last seen six months later and was completely asymptomatic.

In this instance gastroscopy was superior to careful X-ray study. The demonstration of the lesion afforded the indication for prompt elective surgery in an older patient with massive upper gastro-intestinal tract bleeding.

M. R. This patient was a 29-year-old man who bled massively with hematemesis 36 hours before entry. He was in the habit of consuming rather

large amounts of beer and whiskey. Prior to the hematemesis he had been feeling entirely well, although he did give a story of epigastric distress relieved by "Tums" during the preceding year. The type of pain described was atypical of ulcer. His physical examination was negative and he was not in shock. His admission hematocrit was 26%; RBC. 2.6 million; hemoglobin 9.4 grams and bromsulfalein 4% retention in 45 minutes. During the first 48 hours he received 3500 c.c. of blood. The pulse and blood pressure remained stable and the blood counts rose to normal.

A G.I. series with the Hampton technique was done on the second hospital day. It was negative. Because of the alcoholic history and the negative X-ray, an esophagoscopy was followed promptly by gastroscopy. Both procedures were negative. With the stomach and esophagus ruled out as the site of bleeding, a second G.I. series was done on the eleventh hospital day. Pressure was used in the examination and a duodenal ulcer demonstrated. The patient was discharged asymptomatic on the twenty-third hospital day.

Esophagoscopy and gastroscopy offered considerable reassurance to the staff physicians, since this patient's atypical history suggested acute bleeding from either esophageal varices, gastritis, gastric ulcer or duodenal ulcer. We have used this technique of study in several additional cases with a minimum of discomfort to the patient.

W. H. This 53-year-old man entered the hospital on the Surgical Service because of typical ulcer pain of six weeks' duration. Two years previously an elective subtotal gastrectomy, Bancroft type, was done for a painful duodenal ulcer which had previously bled and perforated. Twenty-four hours after his last entry for pain, he experienced massive bleeding without shock. Only one transfusion of 500 c.c. of blood was necessary. Five days later gastroscopy revealed a marginal ulcer on the gastric side, demonstrated by X-ray but interpreted as being in the jejunum. Gastroscopy carried out a month later showed nearly complete healing.

Both the internist and surgeon were relieved to see the actual bleeding site and to watch its healing. Re-examination by gastroscopy is contemplated following a vagotomy. In this case gastroscopy offered proof of a lesion suspected clinically and radiologically.

Marginal and gastrojejunal ulcers are often difficult to demonstrate with X-ray or gastroscopy. This case further demonstrates the value of gastroscopy since proper therapy of any such ulcer depends upon its discovery. This is the sole marginal ulcer of this series.

GASTRIC ULCER

X-ray is an accurate method for determining the presence of gastric ulcer. Gastroscopy is useful in confirming the diagnosis after which healing or progression may be observed. Early features of carcinoma may appear gastroscopically before this diagnosis can be made at X-ray. Occasionally an ulcer will be found which had been entirely missed by X-ray. Even if the entire ulcer cannot be seen and it is impossible to be dogmatic about its being malignant, the appearance of a lesion is of help in the handling of the case. This is especially true in the absence of a definite X-ray diagnosis. In doubtful cases, the surgeon is better satisfied to operate on a case if he is able to see the lesion with the gastroscopist.

O. N. This patient, a 53-year-old mail carrier, received an X-ray diagnosis of a lesser curvature gastric ulcer three years before entry. An X-ray follow-up three months later revealed complete healing. He returned four years later for removal of a benign bone cyst of the internal malleolus. A G. I. series was normal. While on leave two months later he experienced alleged massive hematemesis and black stools. He was treated at home with bed rest, after which ulcer symptoms began. Upon return to this hospital a G.I. series was done and revealed a lesser curvature lesion at the angulus. This was an ulcer which the radiologist thought exhibited characteristics of malignancy. Gastroscopy was done and revealed a benign appearing ulcer about 2 cm. in diameter just proximal to the angulus on the lesser curvature toward the posterior wall. Because of the demonstrated ulcer recurrence and recent massive bleeding in this 53-year-old man, a subtotal gastrectomy (Bilroth I) was done. The ulcer was found 8 cm. from the pylorus on the lesser curvature posterior wall. It was benign when sectioned. The patient's post-operative course was uneventful and asymptomatic.

This case demonstrates how gastroscopy may complement X-ray diagnosis. In this instance it served to relieve the doubt about the possible malignant nature of the lesion.

M. B. This 56-year-old laborer was admitted because of mild hemoptysis, dyspnea, vomiting and left lower anterior chest pain. During the preceding five years he had a yearly attack of pneumonia with considerable sputum accompanied by progressive dyspnea. Thirteen years previously an alleged diagnosis of ulcer had been made and he complained of a burning sensation in his left anterior chest relieved by antacids.

At first, attention was turned to the possible diagnosis of tuberculosis. A G.I. series fifteen days after entry revealed a gastric ulcer on the lesser curvature.

With routine therapy, it became asymptomatic but did not disappear until ten weeks after its discovery. Gastroscopy showed a tiny depression in the gastric mucosa at the angulus. It was interpreted as a healed gastric ulcer. The patient was re-admitted for a check-up six months later. Although he was asymptomatic, X-ray demonstrated a benign appearing ulcer in the same area of the lesser curvature. At gastroscopy a healing benign ulcer was described to be present on the lesser curvature towards the anterior wall at the angulus. Because of the recurring gastric ulcer in this older man, a subtotal gastrectomy (Bilroth I) was done. A benign ulcer was described as being 3 cm. from the pylorus. His post-operative course was uneventful and asymptomatic.

This again demonstrates the manner in which gastroscopy complements X-ray. In this instance it afforded additional reassurance to the surgeon that the lesion which he was to attack was benign. This was especially helpful since a recurrent ulcer in a man of this age has a greater statistical possibility of malignancy than a non-recurrent ulcer.

F. N. This was a 39-year-old man with five years of pain suggestive of peptic ulcer. He complained of persistent pain and vomiting of several months' duration. Initial G. I. series showed an ulcer at or near the pylorus on the lesser curvature. This was not seen at gastroscopy; benign ulcers at the pylorus are rarely seen and ulcers on the lesser curvature of the antrum are in the blind area for the gastroscope. Subsequent subtotal gastric resection (Bilroth I) revealed a benign ulcer on the lesser curvature of the antrum, close to the pylorus. The patient's post-operative course was uneventful.

This demonstrates the mechanical limitation of gastroscopy.

GASTRITIS

This diagnosis is rarely made with accuracy by X-ray and then only in chronic extensive forms. Gastroscopy affords the only reliable means of diagnosing acute gastritis, hypertrophic gastritis, atrophic gastritis and gastric erosions. Severe bleeding may occur from all such lesions. Important symptoms which might otherwise be attributed to a "neurotic personality" or to peptic ulcer are post prandial epigastric distress, fullness, pressure, nausea and vomiting. Atrophic gastritis in particular may be accompanied by spells of weakness, fatigue, anemia and weight loss. These symptoms, of course, might be compared with those of carcinoma of the stomach.

Hypertrophic gastritis occurs frequently with peptic ulcer, so the latter should be suspected if this type of gastritis is found. Atrophic gastritis is the soil upon which cancer may develop, so careful follow-up with gastroscopy and X-ray is necessary. Distress-

ing post-gastrectomy symptoms may be caused by particularly severe inflammation typical of the post-operative stomach. This can be observed only by gastroscopy.

Schindler makes the observation that repeated gastroscopy is needed in gastritis in order to follow its course under treatment because of its usual intractable nature and because far too little is known about its clinical features.

T. F. A 70-year-old man was admitted with partial small bowel obstruction, cause unknown. This was relieved without surgery. He afterwards complained of epigastric pain. The G.I. series showed some antral narrowing. Gastroscopy revealed a small antral polyp on the greater curvature.

A year later the polyp was still present and an area of atrophic gastritis was found on the lesser curvature anterior wall by gastroscopy. There was no free hydrochloric acid on gastric analysis. The patient's age, absence of free hydrochloric acid, gastric polyp and atrophic gastritis made careful X-ray and gastroscopic follow-up necessary.

C. P. A 59 year-old man admitted for repair of bilateral hernias. The operation was uneventful. Because he gave a 30-year history of vague abdominal distress, a negative G.I. series was done. Gastroscopy was requested by the surgeon, and hypertrophic and atrophic gastritis was found in the fundus and cardia with diffuse, mild bleeding from these areas. Follow-up observation of the patient's stomach was recommended especially since no free hydrochloric acid was present in the gastric contents.

Early cancer must be watched for in this man. It is possible that he could develop a major hemorrhage due to the gastritic changes. This particular case demonstrates the advantage of gastroscopy in gastritis since X-ray does not show it.

C. A. A 63-year-old man gave a 5-year history of "gassy stomach" with occasional bouts of vomiting. He complained of heart burn which was relieved by soda. Pain usually occurred with the vomiting, radiating from the epigastrium to the back. Because of an acute attack of pain and vomiting he was referred to this hospital with a diagnosis of obstructing ulcer. The physical examination showed a moderately obese man with mild tenderness in the right upper quadrant.

The blood counts, bromsulphalein test and urinalyses were negative. However, the stools showed 4 plus guaiac test. The first G.I. series was negative. In a second X-ray there was a suggestion of a distorted duodenal cap. At this time gastroscopy was done. There was no free hydrochloric acid in the gastric contents and a non-specific bleeding area was present

high on the lesser curvature toward the posterior wall. There was a bar of smooth tissue in this area which appeared to be a rugal fold with an area of hypertrophic gastritis laterally. Though no bleeding point was seen, this area filled with blood during the examination.

Following this it was suggested that the roentgenologist carefully rule out carcinoma. Instead of tumor, a definite hiatus hernia was demonstrated by X-ray. It seemed reasonable that the original symptoms could be caused by the hernia, and that the bleeding at gastroscopy could be explained by either hypertrophic gastritis or an ulcer or gastritis in the pouch.

The patient returned after three months complaining of epigastric pain at night. He noted regurgitation and burning in the pit of the stomach especially when leaning forward. There had been no gross bleeding and his hematocrit was 43%. Eight-inch shock blocks at the head of the bed relieved his symptoms, so operation was withheld and he was released.

After six months he returned with symptoms. His hematocrit was 46% and free hydrochloric acid was present in the gastric contents. Blood persisted in the stools. Ulcerations were present in the phrenic ampulla on esophagoscopy. Gastroscopy was not done. A month later, a transthoracic repair of a sliding hiatus hernia was done. Although he drained a little blood from the gastric tube post-operatively, he soon became symptom free. He will require further follow-up.

This case demonstrates the collateral and inferential help which may be obtained by gastroscopy in a difficult diagnostic problem. With the aid of esophagoscopy and X-ray, three lesions all of which could cause symptoms and bleeding, have been demonstrated.

TUMOR

To many, the term gastroscopy connotes a procedure to rule out malignancy. From the preceding outline of the subject, it is apparent that much of the value of the procedure deals with other aspects of the diseased stomach and only indirectly with cancer or other gastric tumors. Of course, the procedure is a great help in determining the presence of a tumor and, unlike X-ray, it is possible to appreciate the tumor type and thus offer a tentative prognostication, as well as a suggestion as to the type of surgery which might be anticipated.

Gastroscopy is a necessary procedure along with X-rays and Papanicolaou smears in the early detection of cancer. Although not infallible, it becomes a helpful adjunct in any case of gastric ulcer and polyp. This is especially true in the male past the age of 50, without a definite diagnosis, who has a history of epigastric distress, unexplained anemia, weight loss,

weakness, etc. The finding of atrophic gastritis requires careful follow-up with either repeat X-rays, gastroscopy or both.

We have not had experience with the operating gastroscope at Togos. This instrument, which allows biopsy of the gastric mucosa, has obvious potentialities despite its mechanical limitations.

H. C. A 63-year-old man entered this hospital because of a "food relief" type of epigastric pain of 8 months' duration. It was associated with anemia and weight loss. Other than emaciation and anemia, the physical examination was negative. A G.I. series was interpreted as showing a constricting scirrous carcinoma of the fundus of the stomach. Gastroscopy showed a large polypoid carcinoma on the greater curvature of the fundus toward the anterior wall. A palliative gastric resection was carried out since a 10 cm. tumor with liver metastasis was found on the greater curvature of the fundus.

Gastroscopy made the diagnosis of malignancy in this case final, and demonstrated its type and location more accurately than did X-ray.

J. M. A 59-year-old man described persistent epigastric pain without food relief of three months' duration. Physical examination was negative. There was no anemia, but stools were persistently positive for blood, and there was no free hydrochloric acid in the stomach. Papanicolaou stains were negative. The initial G.I. series was read as negative. Following this, gastroscopy was done and a small "nipple" of tissue was seen extending from behind the angulus. It was thought to be a normal mucosal fold, but the collateral findings of melena, achlorhydria and persistent pain suggested a lesser curvature antral lesion. A repeat G.I. series revealed a stiffening of the lesser curvature of the antrum. After this a second gastroscopy was done. The lesser curvature of the antrum was thought to be distorted and thickened, suggesting carcinoma or lymphoma. At operation, a palliative gastroenterostomy was done, since carcinoma of the greater curvature of the antrum was observed to have extended into the pancreas.

In this instance gastroscopy was neither accurate or definitive. However, suggestive findings on the first examination, plus suggestive collateral observations demanded the continuance of vigorous diagnostic procedures.

J. W. A 65-year-old man entered the hospital because of a tender epigastric mass of one week's duration. For a year he had experienced heart burn, nausea, anorexia and weight loss. At examination, the tender mass was found to be an enlarged nodular liver. A G.I. series revealed a smooth constant narrowing of the distal portion of the fundus. It was

felt that this represented an infiltrating carcinoma. Gastroscopic examination showed a normal antrum. As the scope was withdrawn, a stiff area of pearl gray color was found on the posterior wall toward the greater curvature. A patch of atrophic gastritis was found on the greater curvature. The lesion was interpreted as an infiltrating carcinoma on the posterior wall toward the greater curvature of the fundus.

A few days later an operation revealed the liver to be massively involved, and the abdomen was closed. Palpation of the stomach revealed firm thickening of the anterior wall of the fundus toward the greater curvature. The stomach was nodular, firm and fixed posteriorly.

L. W. Aged 32, entered this hospital with a diagnosis of ulcer or carcinoma of the terminal esophagus. A mass had been seen at esophagoscopy, but the biopsy showed chronic inflammation. The patient complained of epigastric pain directly after eating for about six months. While in the service he had complained of vague stomach trouble.

Physical examination was negative. An occasional stool showed occult blood. Papanicolaou smears were interpreted as negative. Three G.I. series exhibited a mild deformity at the cardia, examined by several consultants and considered to be a normal variant. Two esophagoscopies were normal. The initial gastroscopy was abnormal. Free blood was seen at the cardia and high in the fundus of the posterior wall on the greater curvature there were large reddened rugae with adherent mucous. A second gastroscopy was considered to be normal. A third examination several days later showed hypertrophied reddened rugae at the cardia on the posterior wall. Gross bleeding was again observed. No definite lesion was seen, but on the basis of the bleeding, symptoms and X-ray changes, exploration was advised. The patient improved slightly after nine weeks' hospitalization and, after considerable debate, it was decided to follow the case. Three months later the patient was clinically improved.

At gastroscopy, large rugal folds were again present in the fundus and were thought to represent giant rugal fold gastritis. The bleeding was attributed to this and he was allowed to return home. Three months later he returned with a story of weight loss, pain and dysphagia. An esophageal X-ray was interpreted as showing a definite lesion probably on the gastric side. Esophagoscopy showed a stricture at the esophago-gastric junction. Because of this, gastroscopy was not attempted. A resection of the lower end of the esophagus and upper one-third of the stomach was done. On gross examination it was thought that the 1.5 x 1.5 cm. mass was a gastric

Continued on Page 212

COUNTY SOCIETIES

Androscoggin

President, Alcid F. DuMais, M. D., Lewiston
Secretary, Paul G. Lemaitre, M. D., Auburn

Aroostook

President, Clement L. Donahue, M. D., Caribou
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Thomas A. Martin, M. D., Portland
Secretary, Ralf S. Martin, M. D., Portland

Franklin

President, Wallace H. Duffy, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

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York

President, Kenneth J. Cuneo, M. D., Kennebunk
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Hancock

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, on May 14, 1952. There were eight members present.

The meeting was opened by Dr. Silas A. Coffin, President. Resolutions on the death of Dr. Charles Sumner were read and approved.

Dr. James H. Crowe read a proposed change in the State Association's By-laws whereby a Board of Ethics and Discipline would be set up. It was voted that the society go on record as being opposed to the amendment. It was voted to go on record as favoring an amendment setting up an Investment Committee.

Dr. Robert J. Barrett of Bangor, gave a very interesting talk illustrated with slides on The Role of Infection in Allergy in Children, which was followed by a discussion period.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Kennebec

A regular meeting of the Kennebec County Medical Association was held at the Veterans Administration Center, Togus Maine, April 17, 1952. Dinner at 6.00 P. M. was served by the V. A. personnel to about thirty.

The business session was opened by Dr. Francis H. Sleeper, President. Donald W. Drew, M. D., was elected to membership. A letter from W. Mayo Payson, Executive Secretary of the State Association, regarding the offer of a group sickness and accident policy, was read; the society did not feel the need of the policy.

It was voted to request the State Society to send agenda for meetings of the House of Delegates, to delegates and alternates in time for them to study same before the meetings; the county secretary to write a letter accordingly.

Dr. C. Harold Jameson, President of the State Association, spoke relative to the American Medical Education Foundation.

David Littman, M. D., of Boston, Guest Speaker, was introduced. His subject was, The Present Day Diagnosis and Treatment of Acute Coronary Disease.

A. H. MORRELL, M. D.,
Secretary.

York

The May meeting of the York County Medical Society was held at the Webber Hospital, Biddeford, Maine, May 14, 1952. There were thirty members and one guest present.

A clinic was held from 10.30 to 12.30, with Dr. William F. Mahaney as Chairman, and Dr. Kenneth Warren of the Lahey Clinic, as visiting surgeon.

At the afternoon session, Dr. Warren gave a very interesting talk on Tumors of the Stomach, which was illustrated with lantern slides.

A business meeting followed with a report of the Interim meeting of the House of Delegates held at Pittsfield in April.

C. W. KINGHORN, M. D.,
Secretary.

Clinical Results* with Banthine® Bromide

(Brand of Methantheline Bromide)

22 Published Reports Covering Treatment of 1443 Peptic Ulcer Patients with Banthine																
Comprising the reports published in the literature to date which give specific facts and figures of the results of treatment																
AUTHORS	No. of Patients	Chronic, Resistant to Other Therapy	TYPES OF ULCERS				RELIEF OF SYMPTOMS (Chiefly Pain)				Surgery or Complications ¹	Side Effects Requiring Discontinuance of Drug ²	EVIDENCE OF HEALING			
			Duodenal	Jejunal	Stomal	Gastric	Good	Fair	Poor	No Report			Complete	Moderate	None	No Report
Grimson, Lyons, Reeves	100	100	93	7			80	11	4		5		47		19	29
Friedman	15	15	14			1	5		4	6 ³			2			13
Bechgaard, Nielsen, Bang, Gruelund, Tobiassen	26	26	21			5	16	4	6				8	6	12	
McHardy, Browne, Edwards, Marek, Ward	162		162				136	12	11		3	1	14	9	7	129
Segal, Friedman, Watson	34	34	34 ⁴				14	13			7	2	5		8	14
Brown, Collins	117	99	117				97	7	8		5	8	55	9	8	40
Asher	77		65		7	5	52	9	16			16		9	21	47
Rodriguez de la Vega, Reyes Diaz	5	4	5				4		1					3	2	
Winkelstein	116	116	102	8		6	102		14				53		18	45
Hall, Hornisher, Weeks	18	18	18				11		1	6 ⁵			18			
Maier, Meili	38	38	24			14 ⁶	27	7	4 ⁷				10	2	5	21
Meyer, Jarman	25	18	25				21		4							25
Poth, Fromm	37	37	37				33	3	1				33	3	1	
Plummer, Burke, Williams	41	41	41				36		5				38		3	
McDonough, O'Neil	104	100	104				63	10	31			11	4		11	89
Broders	60	60	58		1	1	35	19	6				10	1	49 ⁸	
Legerton, Texter, Ruffin	11		11				11									11
Holoubek, Holoubek, Langford	76	69	76				35	27	10		4	10	26		10	36
Ogborn	42		39	2		1	42 ⁹									42
Shaiken	48	48	48				33	10	3		2		33	10	3	
Johnston	145	145	145				143		2			2	143		2	
Rossett, Knox, Stephenson	146		141			5	146					4 ¹⁰	53			93
TOTALS	1443	968	1380	17	8	38	1142	132	131	12	26	54	552	52	179	634
PERCENTAGES			67.8	95.6	1.2	0.6	2.6	81.3	9.4	9.3			3.7	70.5	6.6	22.9
<div>1. Not included in tabulations.</div> <div>2. Included in "Relief of Symptoms" as "Poor" and in "Evidence of Healing" as "None."</div> <div>3. Four had no symptoms when Banthine therapy was begun.</div> <div>4. Of which seven were penetrative lesions and five partially obstructive.</div> <div>5. No symptoms were present in four.</div> <div>6. Two with symptoms only; no demonstrable ulcer.</div> <div>7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.</div> <div>8. Roentgen findings after treatment period of two weeks; forty-seven had duodenal deformity.</div> <div>9. All returned to work within a week.</div> <div>10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.</div>																

During the past two years, more than 200 references to Banthine therapy in peptic ulcer and other parasympathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 883 patients on whom reports were available.

In all but 9.7 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

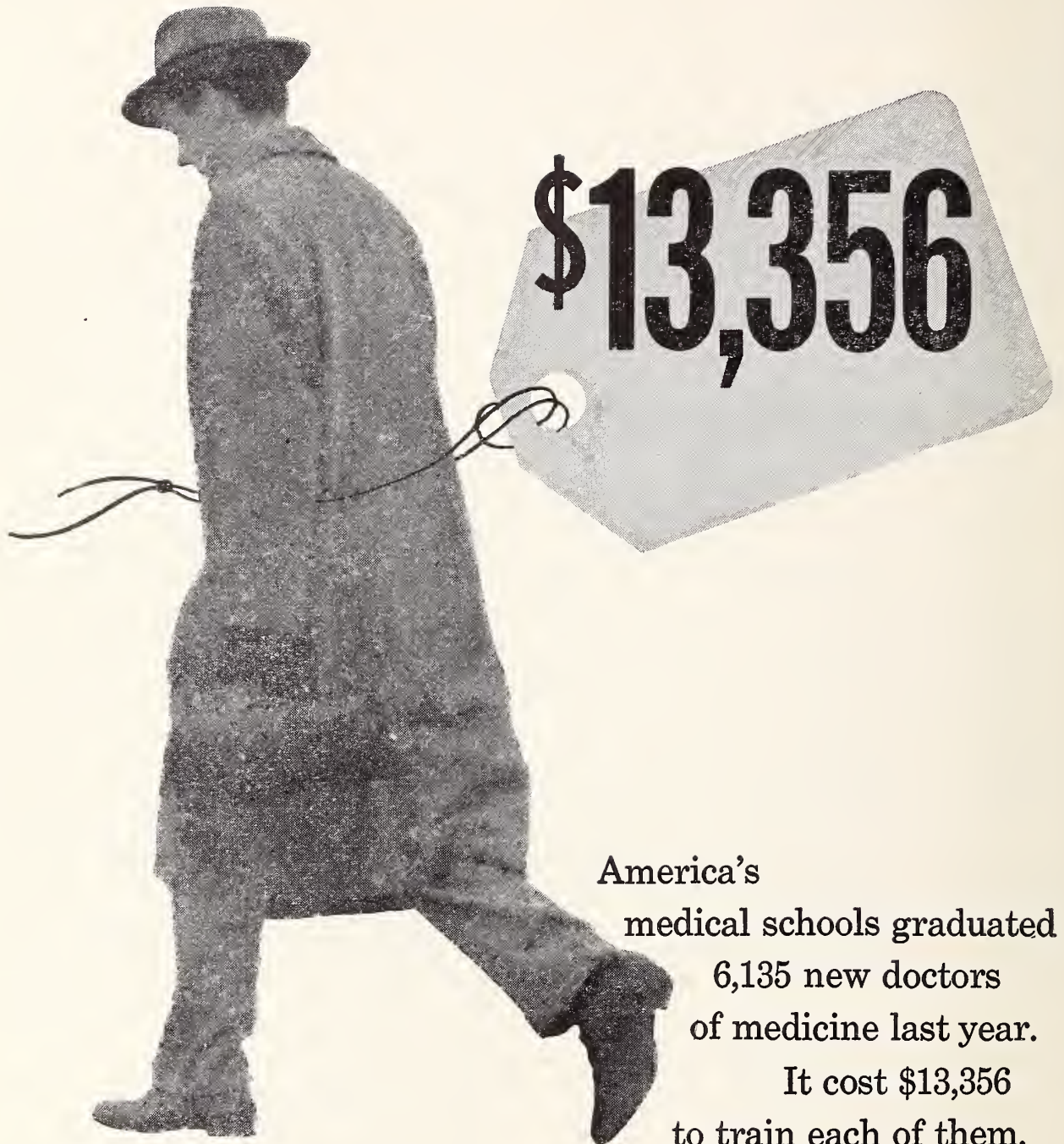
During treatment, 26 patients required surgery or developed complications other than ulcer which required discontinuance of the drug before results could be evaluated.

Of the remaining 1,417 patients, only 3.7 per cent experienced side effects sufficiently annoying to require discontinuance of the drug.



*Volume containing complete references, with abstracts of 39 additional reports, will be furnished on request by

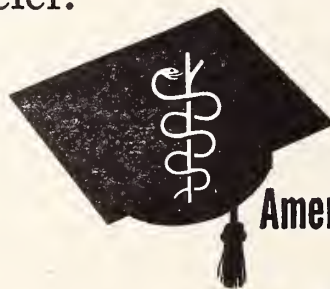
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COUNCILOR REPORTS

First District

To the Officers and Members of the Maine Medical Association:

During the current year 6 regular meetings have been held by the York County Medical Society and 4 meetings by the Cumberland County Medical Society.

Attendance has been good at all meetings and both societies have had excellent programs.

The last meeting of the York County Medical Society was held at the new Webber Hospital in Biddeford and a full day clinical session was held with Dr. Kenneth Warren of the Lahey Clinic.

Respectfully submitted,

WILLIAM F. MAHANEY, M. D.,
Councilor, First District.

Second District

To the Officers and Members of the Maine Medical Association:

As Councilor of the Second District I hereby submit my report for 1951-1952. In the counties of Franklin and Oxford regular meetings have not been held. However whenever affairs of importance came up meetings were held with proper handling of the matters. In Androscoggin County meetings have been held regularly with proper dispatching of the business. In all of these counties there has been much interest concerning Blue Shield, Ethics and Discipline, and Civil Defense. In the near future it is hoped that the members of each county will become more active in making a donation of some size to the American Medical Educational Foundation. At the June meeting this subject will be brought more clearly before our members.

Much credit goes to Androscoggin County for its splendid and well arranged Fall Clinical meeting last October.

Respectfully submitted,

C. C. WEYMOUTH, M. D.,
Councilor, Second District.

Third District

To the Officers and Members of the Maine Medical Association:

I have visited the Knox County Society, the only one in my district besides my own, two times. There is nothing unusual to report.

Respectfully submitted,

ROBERT W. BELKNAP, M. D.,
Councilor, Third District.

Fifth District

To the Officers and Members of the Maine Medical Association:

The Hancock County Medical Society has had a very healthy and prosperous year with loss of some members who

have either gone into the service or moved to other sections, and gaining some new members who have located in the county. I would be only too glad to be able to report the addition of several other new members in towns which are sadly in need of local physicians. The Hancock County Society holds nine regular meetings annually, from September to May inclusive, and usually has an informal meeting during the summer, a meeting without program. The latter was dispensed with last year but we are hoping and planning to hold such a meeting this year. Our attendance continues to be low, usually about the same small group being present, who are loyal so far as the meetings are concerned, and many of the non-attending members continue to be constantly absent. The society has had excellent programs and the type of scientific presentation has improved materially during the last year.

On the whole, I can report that the Hancock County Medical Society is in excellent standing at present.

I have been unable to attend any of the meetings of the Washington County Medical Society, because of conflicting dates, conditions of roads, distance and other circumstances. The increased number of notices this year along with the programs enumerated in each of these notices would indicate that the society has an increase in membership, is much more active and has obviously carried out a good group of meetings with excellent scientific programs. I would feel that the society of this county is in much better condition than it has been for a number of years.

Respectfully submitted,

RAYMOND E. WEYMOUTH, M. D.,
Councilor, Fifth District.

Sixth District

To the Officers and Members of the Maine Medical Association:

It is with pleasure that I submit my report as Councilor for the Sixth Councilor District.

The Penobscot County Medical Association is by far the largest in this district. They held regular meetings from September until June. They had excellent speakers and fine programs at all their meetings, and have been most kind in inviting the members of the surrounding Counties to their meetings. The Piscataquis County Medical Association has requested me to take this opportunity to publicly thank the Penobscot County Medical Association for having sent notices of all their meetings to Piscataquis County members. I believe I am correct in saying that there have been very few meetings of the Penobscot County Medical Association since the war which have not been attended by several from Piscataquis County.

The Aroostook County Medical Association has held four meetings since last May and another meeting will be held in May. Their meetings are well attended and are very happy occasions.

Piscataquis County has four regular meetings a year. This year they also had a special meeting. The meetings have been well attended and were devoted to good fellowship and the little business which comes before the meetings.

Respectfully submitted,

N. H. NICKERSON, M. D.,
Councilor, Sixth District.

COMMITTEE REPORTS

STANDING COMMITTEES

Committee on Public Relations

To the Officers and Members of the Maine Medical Association:

A meeting of the Committee on Public Relations of the Maine Medical Association was held shortly after the Annual Meeting of the Association, with full membership of the Committee in attendance. Executive Secretary Payson presented the results of his observations on Public Relations problems here in our State, and nationally. After discussion it was the consensus of the Committee that our Public Relations could best be improved by efforts to meet emergency calls for physicians to be provided for at the local level, either through community hospitals or by local medical societies; and by the establishment of so-called Grievance Committees. After all, good Public Relations depend upon good Personal Relations upon the part of individual physicians.

Secretary Payson reported that the Portland Medical Club had organized a telephone answering service and had recruited enough of the younger physicians to assign two each day for emergency calls in Portland. This is an excellent example of good Public Relations.

Secretary Payson, at the request of the Committee, has made a survey of the hospitals of the State which shows that in a majority of them an emergency service has been instituted, with the staff physicians furnishing the service and the hospital the means of contact. It is sincerely hoped that this type of emergency service will be extended to every hospital.

The Committee strongly urges the adoption of the proposed amendment to the By-Laws setting up an Ethics and Discipline Committee. This type of Committee often referred to as a Grievance Committee has proven of great value in other States where it has been in operation.

One specific problem with rather serious implications, resulted from a misunderstanding of the policy adopted by the State Department of Health and Welfare regarding State Aid patients in hospitals. It has long been the accepted policy in organized hospitals that professional services to indigent patients hospitalized under the State Aid program be furnished without charge by the Medical Staff. Your Committee feels that this policy should be continued inasmuch as the amount of money available from the State to provide hospital care for these patients is limited and by no means is sufficient to meet all of the cost of such care to the hospitals. If this care was extended to those who were financially able to pay the physician the fund would be further depleted with lessened coverage where needed and still further lowering of payment to hospitals. Whatever money such patients were able to pay should be made to the hospital rather than to the physician. Service to the indigent is both a privilege and a duty for the doctor.

At a hearing with the Commissioner at which representatives of the Association, the hospitals, and your Committee were present, it was pointed out that the issue actually was between the Department and the several hospitals, and that the department had no desire or intent to force doctors to take on any cases unwillingly. It is generally conceded that the Legislature would be loathe to grant money in such amounts as a million dollars a year if this money were to subsidize the patient to pay medical bills.

At that meeting it was brought out that the Department at times was faced with the serious problem of extended care for those cases in which discharge or transfer of a patient might be advisable if available funds were to be conserved and used most effectively. The Commissioner stated that he would welcome the services of an impartial panel of physicians to advise the Department in such cases. It was the consensus of the meeting that the President of the Maine

Medical Association be requested to appoint such a panel, which he has since done.

Respectfully submitted,

FREDERICK T. HILL, M. D., *Chairman*,
M. TIECHE SHELTON, M. D., Augusta,
WARREN E. KERSHNER, M. D., Bath,
THEODORE C. BRAMHALL, M. D., Portland,
FORREST B. AMES, M. D., Bangor,
W. MAYO PAYSON, Portland.

Rural Health Committee

To the Officers and Members of the Maine Medical Association:

The Rural Health Committee held a meeting in Lewiston on October 29th, 1951, in conjunction with the members of the Amy Pinkham Fund Committee, and after its meeting.

The Rural Health Committee was interested to learn whether or not anything looking to improvement in the St. John River Valley might be accomplished. For this purpose Dr. Langer of the State Department of Health and Welfare was deputized for the Committee to discuss the matter with certain State officials who might have particular knowledge of the situation in that location. Dr. Langer met with Mr. Wells, Mr. McMonagle, Miss Dunn, Miss Ross, and Miss Griney on December 17th, 1951, to discuss the matter. Because of the very limited aid available under the Amy Pinkham Fund, this group felt they could not recommend any change in its criteria for its present use for the particular purpose of making it available to the St. John River section.

At the meeting of the Rural Health Committee held in October, 1951, there was considerable discussion as to community health councils, which are recommended by the Rural Health Committee of the American Medical Association, and which are reported to be doing especially good work in many of the states. It was stated that in Maine the community health councils are mostly a voluntary adjunct of the nurses working out of the State Bureau of Health, that perhaps the field was not broad enough to hold the interest of the voluntary worker, and that possibly by coöperation between the Maine Medical Association and the State Bureau of Health more community health councils with a broadened program might be stimulated.

The Secretary of the Rural Health Committee reported to that Committee that, notwithstanding the fact that rural areas in Maine need doctors, the Portland office of the Maine Medical Association has found it impossible, despite repeated requests, to keep a list of locations in Maine where doctors are needed and keep that list current. He pointed out that inquiries do come to the Portland office for locations from out-of-state doctors who wish to come to Maine and practice in rural areas. The Rural Health Committee voted to direct the Secretary to write to the Secretaries of the several County Societies requesting them to keep him informed of locations in their Counties where doctors are needed.

Respectfully submitted,

NORMAN H. NICKERSON, M. D.,
Chairman.

Committee on Medical Education and Hospitals

To the Officers and Members of the Maine Medical Association:

In a letter from Dr. Samuel Proger to Dr. Richard Hawkes, Chairman of the Committee on Medical Education and Hospitals, dated May 13, 1950, he stated: "I have been

given assurance by Dean O'Hara to the effect that Tufts Medical School would agree to take as many as 20 Maine boys each year, that is 20 minus those accepted at other medical schools. I am told that because of the interest of the Bingham Fund in Maine the school already had a policy of giving Maine boys preference over other applicants, all other considerations being equal."

In a subsequent letter dated May 15, 1950, Dr. Proger further stated, "I believe you might even consider the possibility of having a certain number of nominees for medical school approved by representatives of the Maine Medical Association."

This committee then was authorized by the Council to create and maintain contacts with the heads of the science departments of the 4 Maine colleges for the purpose of knowing as nearly as possible how many Maine boys are being admitted to medical school with the thought of attempting to direct qualified men to Tufts Medical School in accordance with their voluntary agreement.

In November, 1951, questionnaires were sent to Dean Nathaniel C. Kendrick, Bowdoin College, Prof. Lester F. Weeks, Colby College, Dr. Wm. H. Sawyer, Bates College, and Dr. B. R. Speicher, U. of M. The following information was requested: 1. The number of senior residents of Maine who were applying to medical school. 2. The number of senior residents who had been accepted and 3. The total number of pre-medical students in the graduating class — resident and non-resident. The results were as follows:

Bowdoin: 20 pre-medical students, 8 residents of Maine.

Information relative to whether they had been accepted to medical school was not available.

Colby: 8 pre-medical students, 4 residents of Maine.

4 had not been accepted and it was too early to determine how many would be accepted.

Bates: 11 pre-medical students, 2 residents of Maine.

1 had not been accepted to medical school.

U. of M.: 6 pre-medical students, all residents of Maine.

2 had been called for interviews, but it was too early to determine how many would be accepted.

From the above information, there are 20 Maine residents applying and at least one who has not been admitted to medical school.

It is recommended that the attitude of Tufts Medical School be brought to the attention of Maine physicians and if there are any Maine residents who are having difficulty in gaining admission to medical school, that it be brought to the attention of the Council of the Maine Medical Association.

Respectfully submitted,

WALDO A. CLAPP, M. D.,
Chairman.

SPECIAL COMMITTEES

Diabetes Committee

To the Officers and Members of the Maine Medical Association:

During the week of November eleventh, the American Diabetes Association sponsored the third National Diabetes Detection Drive under the auspices of the State and County Medical Societies with the aid of local hospitals, physicians and nurses.

The names of the members of the Diabetes Committee representing the Maine Medical Association were forwarded to the national chairman from whom material could be obtained for examining urines free of charge. The number of

specimens examined in Maine was below that of 1950 in spite of the usual help given us by the press and radio. Much credit for that which was accomplished should go to the nurses in the industrial plants, especially in Portland where a total of 844 tests were made out of a total of 1384 tests done in industrial plants throughout the state. The remainder of the total number of tests, 2309 in all, was carried out by private physicians and hospitals. Twenty positive reactions were recorded and the reports forwarded to the family physicians.

The National Chairman of the Committee on Diabetes Detection and Education, Dr. John A. Reed, felt well satisfied with the Maine report and stated that later it might be possible to employ regional field secretaries to assist in detection programs as has been previously suggested by the chairman of the Maine Diabetes Committee. It is hoped that the 1952 Drive will meet with greater success and that especially physicians connected with industrial plants will make a greater effort to assist in this educational program, and send their reports to the chairman of the State Committee.

Respectfully submitted,

E. R. BLAISDELL, M. D.,
Chairman.

Committee on Arthritis and Rheumatism

To the Officers and Members of the Maine Medical Association:

The committee has not had an official meeting during the past year because there was no business to transact.

The medical work of the foundation is going on in Maine at a slow but steady pace. Some of the members of the committee have met separately on occasion at the New England Arthritis and Rheumatism meetings in Boston to discuss common problems of the clinics.

At the present time there are three clinics operating in Maine at the Maine General Hospital, Portland; Thayer Hospital, Waterville; and Eastern Maine General Hospital, Bangor.

At the Maine General Hospital during the year ending May 1, 1951, we have had 74 arthritic patients; of those, 38 were new patients. The patients have been referred by doctors from the southern part of the state.

Of our 74 patients about 15% have required a short period of hospitalization for instruction in procedures necessary for home care. Each new patient is given physiotherapy and taught how to carry on at home.

Only one of our nearly 200 patients is receiving cortisone or ACTH and only two others were given a two-week course of these drugs.

The Arthritic clinic at the Thayer Hospital meets on the last Wednesday of the month. Dr. George J. Robertson and Dr. Joseph H. Giesen are in charge of the clinic. At the Thayer clinic four patients are seen on an average day with one or two new patients each session.

The Arthritic clinic at the Eastern Maine General Hospital meets monthly. The average number of patients per session is ten with three new patients each time. Dr. Robert O. Kellogg, Dr. Lawrence M. Cutler and Dr. John A. Woodcock are the attending physicians.

In the state we have three good and well-staffed arthritic clinics. They are functioning efficiently and seem to be serving the needs of the state at the moment. Clinic appointments may be made by writing the respective hospitals.

Respectfully submitted,

PHILIP P. THOMPSON, M. D.,
Chairman.

Committee on Mental Health

To the Officers and Members of the Maine Medical Association:

During the past year the Committee has become interested in the problem of epilepsy in the state. School superintendents have found that epileptic children in school presented a problem because some of them were not under medical treatment or properly controlled. The State Bureau of Health and the Division of Mental Health became interested in this problem and made the following proposal:

Speakers on the subject of Epilepsy and Its Treatment by the General Practitioner will be supplied to the District Medical Societies by the Division of Mental Health when requested. Arrangements will be made for interested physicians to have a short training period of one or two weeks at the Seizure Unit of the Children's Medical Center in Boston. At a later time an Institute will be arranged in several areas in the state.

The Committee recommends that physicians interested in this field contact the Division of Mental Health or Dr. Dean Fisher, State Director of Health.

Respectfully submitted,

MARGARET R. SIMPSON, M. D.,
Chairman.

Committee on Conservation of Vision

To the Officers and Members of the Maine Medical Association:

The Committee on Conservation of Vision during the past year has continued its program of Aid to the Blind.

At the June, 1950, meeting of the Maine Medical Association an Ophthalmological Section was formed. The following officers were elected: Dr. William R. McAdams, President; Dr. Jay K. Osler, Vice President; and Dr. Richard H. Dennis, Secretary. There was no official meeting during the year.

On Monday, June 23, at The Samoset, Rockland, the Ophthalmological Section will present a day-long program beginning with a symposium on Glaucoma conducted by Dr. Otis B. Tibbetts. The afternoon session will feature a talk on Hypertensive Vascular Changes by Dr. Harold Scheie of Philadelphia. Dr. Scheie will also speak on Congenital Glaucoma, and present a movie on Chronic Glaucoma.

Respectfully submitted,

HOWARD F. HILL, M. D.,
Chairman.

Committee on Social Hygiene

To the Officers and Members of the Maine Medical Association:

As Chairman of the Committee on Social Hygiene I felt it wasn't necessary to hold any meetings of the Committee, as there has been a continued decline in the cases of venereal diseases reported to the State Department of Health and Welfare over a year ago. I personally believe there has been a decided drop in new cases, and the drop is not due to unreported cases.

About three weeks ago the V. D. Clinic at Portland was visited by a regional Federal Health Officer and our own City Health Officer, Dr. Edward W. Colby. They, too, felt that the decline in new cases is real as other New England areas are not seeing many new cases in comparison to the World War II years and several years that followed.

Respectfully submitted,

O. R. JOHNSON, M. D.,
Chairman.

Amy W. Pinkham Fund Committee

To the Officers and Members of the Maine Medical Association:

The will of the late Amy W. Pinkham (1943) provided a trust fund of \$20,000, the interest of which was to be expended to aid tuberculous or malnourished children, preferably from rural areas. This fund was left to the Maine Public Health Association, now the Maine Tuberculosis Association (renamed 1950), to be expended on advice from the Maine Medical Association.

The first project undertaken with Pinkham funds was in April, 1948, at which time a sum of \$445.80 was expended to make possible a demonstration teaching program at Western Maine Sanatorium. This project eventually resulted in the formation of an educational service in the sanatorium as part of the institution's regular program which permitted children to continue school work while undergoing treatment.

Late in 1950 a new project was devised which permitted the applying of Pinkham funds to assist with the initiation or improvement of school hot lunch programs in schools serving rural populations by helping with the purchase of needed capital equipment items. It was hoped that this project would also stimulate wider use of pasteurized milk in school lunch programs.

Definite policies of screening schools and administering the fund were established. The first grants awarded under this new program were made in 1951. They were as follows:

Ashland Community High School, Refrigerator.

Ellsworth Falls School, Refrigerator.

The grants made since June 1, 1951, are as follows:

Harmony School, Refrigerator, June 7, 1951,	\$ 250.00
Strong Village School, Refrigerator, Aug. 24, 1951,	100.00
Sebec School, Refrigerator, Sept. 17, 1951,	250.00
Williams Consolidated School, Two-Section Sink, Nov. 14, 1951,	108.01
Kezar Falls School, Two-Section Sink, Nov. 20, 1951,	125.00
Howland School, Refrigerator, Jan. 22, 1952,	160.00
Stratton School, Two-Section Sink, Feb. 6, 1952,	120.00
Cherryfield School, Refrigerator, Mar. 20, 1952,	226.77
Garland School, Refrigerator, Apr. 14, 1952,	186.96
Total,	\$1,526.74
Balance on Hand, June 1, 1951,	\$3,234.51
Interest Received,	356.25
Total Available for Program,	\$3,590.76
Expended since June 1, 1951,	1,526.74

Balance Available for Future Program, \$2,064.02

Your committee met in October, 1951, with the Rural Health Committee and Dr. Warren Kershner and Mr. E. P. Wells, executive secretary of the Maine Tuberculosis Association. At this meeting it was questioned if more assistance should not be concentrated in the St. John Valley area of Aroostook County. It was requested that a special committee to include Dr. Ella Langer, Mr. Wells and Mr. Edward McMonagle, Department of Education, and others whom they desired to confer with, meet to discuss this matter. A summary of this discussion is as follows: "... that in several areas in this territory (St. John Valley) which need programs and which normally would be offered help, processes of school consolidation are underway which would not therefore recommend themselves to assistance of this kind at the present time." Further, "it appeared generally to be felt that the criteria now established should be continued; that grants should be made on established need with proof of local effort; and, that they should be granted according to the above considerations rather than by area. Also, it was agreed that workers of the departments and agencies

concerned would give added attention to the St. John River Valley area."

The membership will be pleased to know that this program has stimulated interest in forming new hot lunch projects in several schools and has made possible the availability of pasteurized milk to one area previously serving only the raw product.

Respectfully submitted,

N. H. NICKERSON, M. D.,
Chairman.

Graduate Medical Education Committee

To the Officers and Members of the Maine Medical Association:

More attention is being paid to postgraduate medical education of recent years, and is evidenced by the increase in the number of committees which have been formed by various state medical associations throughout the country. We do not believe that any committee has ascertained at the present time what is the best medium for postgraduate medical education. In the State of Maine, many good educational papers have been given at various county medical society meetings, and through the efforts of the educational committees of many of the hospitals. However, as far as we can determine, these are not attended nearly as well as they should be. Many of the speakers are leading authorities in their field, and frequently travel here from considerable distances and at considerable expense.

It was the thought of this committee that possibly the New England Postgraduate Assembly might serve the purpose of a postgraduate course in medicine for the physicians in Maine. We were supplied with statistical attendance data at the various Assemblies which have been held in Boston in the last few years. While the number of physicians in Maine who have attended this Assembly rank very well in comparison with physicians from the neighboring New England states, the figures are quite disappointing. In 1950, of 695 total attendance at the Assembly, there were 31 physicians from Maine, and in 1951, of the 589 total attendance, there were 34 physicians from Maine. This committee feels that the distance involved in travelling to Boston is the prime factor for poor attendance from Maine.

It is the feeling of this committee that possibly the Fall clinical session which has been conducted by the Maine Medical Association in the past, could very well serve as an excellent medium for postgraduate medical education, and it is the recommendation of this committee that the Council consider the possibility of promoting a program of greater diversification than has been present in the past, and furthermore, consideration be given the possibility of holding two sessions in the Fall in two locations in the state, in order that such programs be available to the physicians at the extreme ends of the state. It is our suggestion that the program could be duplicated by speakers from Maine, as well as those from outside the state, and the program should be so arranged that the program could follow on consecutive days in the southern and northern portions of the state.

Your committee also considered the scientific program at the annual meeting of the Maine Medical Association, as a teaching medium. It was our opinion that the sectional programs given over to the various specialties, while they serve a very excellent purpose for the specialists in attendance, should not conflict with the more general programs going on at the same time. This committee does not recommend the abolishment of the special sectional programs, but wishes to recommend that the times be so arranged that they do not conflict with the general program which in its total has a much wider appeal to the average practitioner of medicine.

This committee would like to commend the educational programs which are now being carried out in many of the hospitals in Maine, and feels that the calibre of these scien-

tific sessions has shown a very definite improvement in the last few years.

This committee wishes to recommend that the Secretary of each county society determine which members in his society have papers prepared, or can give papers, at other county society meetings, and that a list of these individuals be sent to the Secretary of the Maine Medical Association and be published in the JOURNAL under the heading of "Speakers' Bureau," with the names of the speakers from each county, and the title of whatever subjects they feel qualified to present.

Respectfully submitted,

JOSEPH E. PORTER, M. D., *Chairman*,
CHARLES F. BRANCH, M. D.,
LLOYD BROWN, M. D.,
MILAN A. CHAPIN, M. D.,
WILLIAM F. MAHANEY, M. D.,
GEORGE L. MALTBY, M. D.,
RICHARD C. WADSWORTH, M. D.

Committee on Civil Defense

To the Officers and Members of the Maine Medical Association:

Regional meetings for the convenience of the members of the Committee were held prior to the Spring Meeting of the House of Delegates and a meeting of the entire committee will be held on 22 June, 1952, at Rockland. The Committee's policy has continued to be that it should serve as an advisory group to the President, Council and members of the Maine Medical Association and to the State Director of Civil Defense and Public Safety and his staff on matters pertaining to the Medical Aspects of Civil Defense planning. The recommendations and accomplishments of the Committee on Civil Defense for the year 1951-1952 are summarized below.

A. The Committee on Civil Defense of the Maine Medical Association voted to endorse and to urge acceptance by this Society and by the State Civil Defense Director and his number 3 Deputy Director the following recommendations made on 8 June, 1951, by the National Research Council, Subcommittee on Burns and subsequently adopted by the Department of Defense and by the Federal Civil Defense Administration as set forth below:

I The Standard Burn Dressing (Universal Protective Dressing)

In approving this new type dressing, the Subcommittee on Burns emphasized that the principle involved is protection of the injured area from all kinds of trauma, including infection, in such a way as to create the most satisfactory condition for healing. Since its usefulness is not limited to the treatment of burns the dressing is also called a universal protective dressing. It can be used on all types of wounds, including lacerations, penetrating injuries, and compound fractures, with splints applied over the dressing. It also can be used as a compression dressing.

The general characteristics of the dressing are:

- "That the common dimension of the burn dressing be established at 22 inches and that the dressing be manufactured in the two separate sizes of 22 x 36 inches and 22 x 18 inches."
- "That the inner surface of the burn dressing shall be made of 44-gauge dry white surgical gauze."
- "That the intermediate layers of the burn dressing shall be composed of cotton followed by 15 layers of cellulose. Outside of this there shall be an additional two-to-six layers of cellulose treated for water repellency but not impervious to water vapor."
- "That the outermost layer of the burn dressing shall be made of muslin-type material, brown or

khaki in color, which is water-repellent but not impervious to water vapor."

- c. "Sizes": "The large size, 22 x 36 inches, is designed for extensive burns or wounds of adults; the small size, 22 x 18 inches, is designed for burns or wounds of smaller areas, such as the hands and face, and for children. Both sizes will be procured for Federal reserve stores of medical supplies and should be procured by states and communities as part of local reserve supplies for immediate use."

The Committee on Civil Defense of the Maine Medical Association has further recommended that the above type "Universal Protective Dressings" be stocked by the hospitals in this state as soon as they become available through commercial channels; and that the State Civil Defense Director stockpile these burn dressings for use by the Civil Defense medical units in event disaster should strike.

II First Aid Treatment of Burns in Time of Disaster

- a. "No ointment or other topical medication to be used for surface treatment of cutaneous burns as a First-Aid Measure."
- b. "Universal Protective Dressing," if available, or if not, a clean dry dressing such as old sheets, towels, or other clean ironed material which can be prepared in any household, should be applied to the burn. Such dressing protects the burned area, and by covering it, tends to relieve pain. In addition, it will not interfere with subsequent definitive therapy when the burned victim is treated at an aid station or hospital.

B. The Committee on Civil Defense of the Maine Medical Association voted to approve the "Exposure (open) Treatment of First and Second Degree Burns" as outlined below by the Armed Forces:

I Technic

- a. Clothing or dressing are removed, preferably using aseptic precaution, as soon as patient is seen.
- b. Gross dirt is washed off the injured area with warm water with the addition of some detergent such as hexachlorophene, or with a bland white soap.
- c. All blister are opened and all detached epithelium is removed.
- d. Morphine given intravenously provides sufficient analgesia if the burn is recent. Light general anesthesia is usually necessary if the burn is older.
- e. Three thousand units of tetanus antitoxin for those not immunized by tetanus toxoid; or a booster dose of tetanus toxoid if patient has been actively immunized against tetanus.
- f. 600,000 units of aqueous procaine penicillin G to be given intramuscularly on admission. This same dose of aqueous procaine penicillin to be given daily for an additional 4 days, and thereafter only for a specific indication.
- g. After debridement, the patient is placed in bed in the position which best exposes the affected areas. Sterile sheets are not necessary.
- h. Burned extremities are elevated to prevent additional edema thus preventing the conversion of partial-thickness burns to full-thickness burns.
- i. Relative immobilization of the affected parts is of utmost importance.
- j. One week after injury is regarded as the upper limit of applicability of the exposure treatment of first and second degree burns.
- k. Patients in shock on arrival should first be treated intensively for shock as follows:
 1. Place patient between two clean sheets.

2. The quantity of blood and electrolyte required is determined by the extent of the body burn. Urinary output should be maintained at 40 to 60 c.c. per hour.
3. Patients with a burn of more than 25 percent of the body surface should have an inlying catheter inserted.
4. Cannulation of a vein for fluid replacement is desirable.

C. The Committee on Civil Defense of the Maine Medical Association voted to endorse and to urge acceptance by this Society and by the State Civil Defense Director and his Medical Staff the recommendations made by the "National Resources Council, Division of Medical Sciences" concerning the establishment of an "Antibiotic Reserve" for use in time of emergency. These recommendations as made by the National Resources Council Division of Medical Sciences in a letter dated 19 December, 1951, to Dr. Norvin C. Kiefer, Director, Health and Special Weapons Defense, Federal Civil Defense Administration are as follows:

- (1) "That an oil preparation of procaine penicillin G 300,000 units per ml. fortified with crystalline sodium or potassium penicillin G 100,000 units per ml., packaged in glass rubber-stoppered cartridges containing 1 ml. with accompanying disposable single-dose plastic syringes, be procured for intramuscular injection at first aid stations in the early hours after the bombing."
- (2) "That the preparation described in (1) also be procured for intramuscular use in all other installations treating casualties."
- (3) "That dry crystalline sodium or potassium penicillin G in 20 ml. glass rubber-stoppered vials with aluminum seal containing 1,000,000 units be procured for parenteral administration in hospitals only."
- (4) "That streptomycin in any certified form, such as streptomycin sulfate or dihydrostreptomycin sulfate, or the calcium complex of streptomycin, be procured in glass rubber-stoppered vials with aluminum seal containing equivalent of 1 gram of streptomycin base, for intramuscular administration in hospitals only."
- (5) "That aureomycin, chloramphenicol, and terramycin be procured in bottles containing 100 capsules of 250 mgm. each, for oral administration in all installations treating casualties."
- (6) "That dry preparations of aureomycin, chloramphenicol, and terramycin in glass rubber-stoppered vials with aluminum seal containing 100 mgm. (for children) and 500 mgm. (for adults), in dual packages with suitable diluent, be procured for intravenous administration in hospitals only."
- (7) "That a dry preparation of polymyxin B in glass rubber-stoppered vials with aluminum seal containing 50 mgm. activity be procured in small amounts which will not interfere appreciably with production of the antibiotics mentioned above, and that this be provided for parenteral administration only in hospitals where close supervision is possible."

"Though not formalized in official motions, a suggested plan for use of these antibiotics was brought out in the discussion. This plan is in general compatible with the current thinking of the Committee on Surgery and the Subcommittee on Burns which as you know are preparing articles on the emergency treatment of wounds and burns in major disasters, copies of which will be furnished to you shortly. The following outline is forwarded to you at this time with the thought that it may be helpful in determining the amounts of various antibiotics needed."

"Casualties with minor or moderate injuries (burns or wounds) who are able to take medication by mouth can be started when indicated on aureomycin, chloramphenicol, or

terramycin orally in the first aid station in a dosage of 750 mgm. q 8-12 hours, and this can be continued on an ambulatory basis or in the hospital. Unless specific indications exist, "prophylactic" chemotherapy for wounds should be stopped at the end of 5 days, and for burns at the end of 7 days."

"Burn or wound casualties requiring antibiotic treatment, who are unable to take oral medication should be given, on arrival at the first aid station for initial treatment, an intramuscular injection of 1 ml. of an oil preparation containing 300,000 units of procaine penicillin G and 100,000 units of crystalline sodium or potassium penicillin G. All with serious injuries should get this injection and those with extensive burns or wounds should receive two simultaneous intramuscular injections of 1 ml. each, given at different sites. Administration can be continued at 24-hour intervals in hospital, or be supplanted by an oral broad-spectrum antibiotic or by crystalline sodium or potassium penicillin G as described below."

"Patients with established or anticipated serious mixed infections, especially in the presence of severe burns, compound fractures, fecal soiling, extensive crush or laceration of muscle, arterial injury, etc., should, on reaching the hospital and within 24 hours after the initial oil injection, receive aqueous crystalline penicillin G intramuscularly in doses of 500,000 units q 8 hours. When indicated, as in wounds or burns of buttocks and perineum, fecal soiling, intestinal perforation, etc., streptomycin should be given intramuscularly in a dose of 0.5 gm. q 8 hours as an adjunct to penicillin therapy. Because of the rapid development of bacterial resistance, it is generally useless to continue streptomycin therapy for acute injuries beyond 5 to 7 days."

"If serious mixed infections do not respond well in 2-3 days to combined penicillin-streptomycin treatment, aureomycin, chloramphenicol, or terramycin should be given *intravenously* in doses (for adults) of 500 mgm. q 8 hours, administered slowly with 5% dextrose solution, changing to the oral route as soon as possible."

"Hospitalized patients with suspected or established clostridial myositis (true gas gangrene) should receive aureomycin, chloramphenicol, or terramycin *intravenously* 500 mgm. q 8 hours. If these drugs are not available large doses of penicillin are required; aqueous crystalline penicillin G 1,000,000 units intramuscularly q 3 hours is recommended."

"Polymyxin B is suggested for use in serious pseudomonas (pyocyanus) or certain other resistant infections. These are not expected to occur in large numbers. Because of the toxicity of the drug it should be supplied only where facilities and personnel exist for careful supervision with observation for neurological and renal signs of toxicity. Only relatively small amounts need be procured."

The Chairman of the Committee on Civil Defense of the Maine Medical Association attended the National "Medical Civil Defense Conference," sponsored by the American Medical Association, American Hospital Association and the Association of State and Territorial Health Officers on November 9-10, 1951, in Chicago and was a member of the four man panel that conducted a round table discussion on the general subject "Mobile Support." One of the most important actions taken by the Medical Civil Defense Conference was its unanimous passage of the following resolution presented by Dr. Perrin H. Long, member of the Council on National Emergency Medical Care of The American Medical Association. The resolution reads as follows:

"It is the consensus of the Medical Civil Defense Conference, sponsored by the American Medical Association, the American Hospital Association, and the Association of State and Territorial Health Officers, and held in Chicago, November 9th and 10th, 1951, that within a year, all active nurses, dentists, osteopathic physicians, veterinarians, pharmacists, nurses' aids, trained technicians, dietitians, rehabilitation and occupational technicians, social workers, medical and paramedical personnel, hospital administrators, physicians, and all other medical personnel not named above, be

assigned to their proper place in the local civil defense organizations, this assignment to be the responsibility of legally authorized civil defense officers, according to the laws in the various states, and only after full consultation with the local, state and/or national professional and tactical organizations. Training of individuals and units will be the prime responsibility of legally authorized civil defense officers, again only after full consultation with local, state and/or national professional health organizations in these fields."

The Committee on Civil Defense of the Maine Medical Association has voted to endorse this resolution as it would apply to allopathic physicians in Maine and to recommend that the Council and the House of Delegates of the Maine Medical Association approve said resolution. At their meeting on April 12, 1952, the Council voted unanimously to approve the above resolution. A motion was made and seconded at the Spring meeting of the House of Delegates to approve this resolution but the matter was tabled until the Annual meeting in June.

The Chairman of this Committee and the Chairman of the Committee on Civil Defense of the Auxiliary to the Maine Medical Association have met with Dr. Ralph A. Goodwin to plan a program for the Woman's Auxiliary. The state and county auxiliary organizations have taken a real interest in Civil Defense and have developed a worthwhile program.

The Chairman of the Committee on Civil Defense of the Maine Medical Association spent a day in Washington last July (1951), with Colonel William Wilson, Assistant Administrator, Health and Welfare, and made a tour of the Federal Civil Defense Headquarters. Many valuable contacts were made with Colonel Wilson's staff. Recently, Dr. Alphin, Consultant in Chemical Warfare, came to Maine for an all-day conference on Special Weapons Defense. During his visit here he stated that Maine had one of the best Special Weapons Defense plans thus far, of any state. Dr. Charles F. Branch and Dr. Dean Fisher, both members of this Committee, have contributed much to the Special Weapons Defense plans.

The Chairman of this Committee and Colonel O. H. Stanley, a member of this Committee and a member of the State Civil Defense Staff, represented Maine at the Regional Civil Defense Meeting in Boston on January 5, 1952, for the State Civil Defense Directors of New England, New York and New Jersey. Colonel Stanley was appointed as one of three members on a three man special Regional Medical Advisory Committee which met on 21 March, 1952, to correlate the various state medical plans in the New England Region. Considerable progress was made at this latter meeting.

Through recommendations made by the Chairman of the Committee on Transfusions (also a member of the Committee on Civil Defense) and Dr. Dean Fisher and other members of this Committee, the State Civil Defense Office has placed with the Federal Civil Defense Agency on a 50-50 matching basis, orders for 20,000 donor sets, 20,000 recipient sets, 12,000 whole blood storage bottles, 5,000 liquid plasma storage bottles and 1000 units of A-B substance. These blood supplies are to be stored in strategic places in the State for use in an emergency for procurement of the blood from walking blood banks which blood may be urgently needed should disaster strike.

Members of this Committee have helped prepare and put into operation a Chemical Defense, a Radiological Defense and a Biological Defense plan for this State in the past year. The Radiological detection instruments required for 5 detection teams are either already available for use or are on order. The radiological defense plan has already been published in the JOURNAL and the Chemical Defense plan has been presented for publication.

The State Public Health Defense Plan has been completed and put into operation since this Committee made its report a year ago. The plan has been presented to the MAINE MEDICAL JOURNAL for publication by this Committee.

Some members of this Committee and other members of the Maine Medical Association are serving as County Deputy

Civil Defense Directors #3 in 15 of our 16 counties. Ten of these #3 County Deputies have completed their County Medical and Special Weapons Defense plans.

Members of this Committee coöperated with representatives from the Maine Pharmaceutical Association in drawing up an inventory questionnaire for drug stores throughout Maine. The questionnaire was sent out to 204 drug stores and over 150 questionnaires were returned. Much valuable data was obtained in regard to medical supplies and drugs on hand in Maine.

Members of the Maine Hospitals Committee on Civil Defense and members of this Committee have coöperated in drawing up a questionnaire that was sent out to all the General Hospitals in Maine and over 50 were returned. Again much valuable information was obtained in regard to the size of the inventory of expendable medical supplies and other critical medical equipment carried by hospitals in this state.

Members of this Committee and of the Committee on Civil Defense of the Maine Hospital Association are now working on the details of the Table of Organization and Equipment for the Mobile 100 bed hospitals and for the 200 and 400 bed auxiliary hospitals that must be organized in this state in anticipation of an emergency. At present there are less than 5000 beds listed in the registered general hospitals in Maine. It has been agreed that at least 8 and perhaps 10 beds must be provided for emergency use for every one we now have. This estimate is in agreement with similar estimates made in other states.

The Committee on Civil Defense of the Maine State Nurses' Association has coöperated fully with this Committee on all matters pertaining to the professional aspects of Civil Defense planning. The State Nurses' Association sent out 3975 cards to nurses and got back 2694 replies and 2071 nurses indicated that they were available and were willing to take Civil Defense emergency assignments. This is a most gratifying response. Assistant County (Nurse) Deputy Directors #3 have been appointed for all the counties and will help the #3 Deputy County Directors make assignment of nurses.

The Committee on Civil Defense of the Maine Dental Association is coöperating fully with this Committee on all matters pertaining to the professional aspects of Civil Defense. Assistant County (Dental) Deputies have been appointed in all counties in this state and will be under the direction of their respective #3 Deputy County Directors and will advise the latter in regard to the assignment of Dentists in the County Civil Defense organizations.

The Chairman and members of this Committee on Civil Defense of the Maine Medical Association wishes to express their appreciation to the President and to the members of the Council of this organization for their continued coöperation. The Chairman and members of the Committee on Civil Defense of the Maine Hospital Association; of the Maine Dental Association; of the Maine Pharmaceutical Association; of the State Department of Health and of all other related professional groups richly deserve the thanks of this Committee on Civil Defense of the Maine Medical Association for their assistance and coöperation. Finally, the Chairman and members of this Committee particularly want to thank the House of Delegates and the members of this Association for their assistance and coöperation and for the willingness of many members to accept Civil Defense assignments.

In conclusion, the Chairman wishes to thank the members of this Committee for the time they have given to the work of the Committee and for the superb advice and assistance that they have given their Chairman.

For the Committee on Civil Defense,
CHARLES W. STEELE, M. D.,
Chairman.

Cancer Committee

To the Officers and Members of the Maine Medical Association:

This committee feels that the tumors clinics in the various

hospitals in the State are functioning in a manner worthy of commendation. The committee endorses the recommendation of the American College of Surgeons, that a Tumor Committee should be formed in each hospital, the purpose of which is to make available consultative services for the diagnosis and therapy of cancer. Your committee suggests that a Tumor Committee be formed in the hospitals to be available for consultation only when a physician requires the help of such a committee. The purpose of the committee, in addition to its consultative function, should be to gather statistics with respect to morbidity and mortality, and evaluation of the methods used in that particular hospital in the treatment of cancer. We have assurance that statistical advice can be obtained through the State Department of Health in planning such a study. In order that there may be a uniform method of evaluating morbidity and mortality data, this committee recommends a uniform method of record-keeping, and suggests that the record form of the American College of Surgeons be adopted by all hospitals and clinics. We feel, however, that before such a record system is adopted, there should be a meeting of the representatives of the various tumor clinics, to determine if this is a satisfactory record form in the opinion of all those who will be involved.

On May 8 your committee had a very productive meeting at the Thayer Hospital in Waterville, with representatives of the Maine Cancer Society, and of the State Department of Health and Welfare. The purpose of this meeting was to correlate and determine the activities of the two agencies. It is the recommendation of your committee that the activities, which are listed below, of these two agencies be printed and published in THE JOURNAL OF THE MAINE MEDICAL ASSOCIATION, and copies sent to all physicians in Maine, so that they will be acquainted with the functions of the two agencies. They will then be able to advise their patients more intelligently with respect to where assistance may be obtained. Many physicians who never knew of the educational facilities of the two agencies may wish to take advantage of the programs offered by these organizations.

State Department of Health and Welfare:

Educational:

1. The State has budgeted a certain amount of money, which is to be used to pay speakers at the county medical society meetings. It is recommended that the secretaries make application to the State Department of Health for any speakers for the coming fiscal year, stating the approximate cost, the time, and the subject of the speaker.
2. The State will also finance speakers on the subject of cancer for special programs.
3. The State has also budgeted a certain amount of money to be known as a scholarship fund, to be paid to physicians for special training in cancer diagnosis and therapy.
4. This also applies to the training of technicians in special diagnostic methods related to the diagnosis of cancer. Qualified physicians and technicians should apply to Dr. Dean Fisher, State Department of Health, stating the time, place, and the subject matter to be studied. It is expected that a brief report of the training should be furnished to the Department of Health after the period of training has been completed. It is suggested by the State Department of Health that the Educational Committee of the Maine Medical Association be the agency to act on all applications.
5. The State Department of Health will also pay for the services of an expert when brought into the area to study the efficiency of already existing Tumor Clinics.
6. Films available for the education of the physician and the laity:

(Supplied on request on advance notice and without charge except for return postage.)

Films for Lay Use:

THE ENEMY—16 mm. Black and white. Sound. 15 min.

Presentation of the cancer problem generally. For all audiences.

CHALLENGE — SCIENCE AGAINST CANCER —
16 mm. Black and white. Sound. 35 min.

A documentary science film, depicting a graphic scenario of cancer research. Especially designed for science classes—High School and college students. Of interest to student and professional groups.

MAN ALIVE (on order)—16 mm. Sound. Color. 12 min.

The film deals primarily with the psychology of fear as it relates to cancer and attempts to show the lack of good sense behind the wrong reaction to the fear of cancer. A colorful, animated cartoon-type film for general audience education.

BREAST SELF-EXAMINATION — 16 mm. Sound. Color. 16 min.

(For lay audiences under professional guidance.)

This film is primarily designed for adult women's groups. A live model is used to explain the steps women can follow in breast examination. The film stresses the fact that if breast cancer were suspected earlier by women themselves through routine self-examination, 80 per cent of the patients could be saved. For professional use: (These films are four in the proposed total series of six teaching films for professional use jointly compiled by the National Cancer Institute and the American Cancer Society.)

CANCER: THE PROBLEM OF EARLY DIAGNOSIS—16 mm. Sound. Color. 30 min.

A discussion of cancer; methods of detection; surgical techniques. Stresses the importance of reducing mortality of cancer of the breast, cervix, stomach, lung, rectum, through: a) Early Suspicion, b) Accurate Diagnosis, c) Effective Treatment. A teaching film. For the general practitioners, nurses, hospital staffs, medical society groups.

BREAST CANCER: THE PROBLEM OF EARLY DIAGNOSIS—16 mm. Sound. Color. 30 min.

A discussion of the problem of breast cancer. Demonstration of simple method by which the adult women may examine their breasts correctly. For professional and limited lay use under professional guidance, medical societies, hospital staffs, nurses.

GASTRO-INTESTINAL CANCER: THE PROBLEM OF EARLY DIAGNOSIS—16 mm. Sound. Color. 30 min.

A discussion of the problem of early diagnosis of gastro-intestinal cancer; methods of detection; surgical techniques. A teaching film. For physicians, medical societies, hospital staffs, nurses.

UTERINE CANCER: THE PROBLEM OF EARLY DIAGNOSIS—16 mm. Sound. Color. 21 min.

A discussion of uterine cancers generally, with emphasis in the most prevalent form—carcinoma of the cervix. Technique of detection receives special emphasis; the importance of the general practitioner in discovering the disease early. The film stresses strongly the significance of early and accurate diagnosis to make possible the most effective treatment. A teaching film. For physicians, medical staffs, and allied professional groups.

7. Cancer material in the form of literature:

CANCER MATERIALS:

- a. The Department is supplying free annual subscriptions to The Cancer Bulletin, compiled by the Medical Arts Publishing Foundation, Texas, to 154 physicians in the State who have requested this service through a special poll of all physicians.
- b. Copies of the revised version of CANCER—A MANUAL FOR PRACTITIONERS published by the Massachusetts Division of the American Cancer Society have been supplied all physicians in the State.

c. Pamphlet materials available on request to the Department:

Self-Examination of the Breasts—Companion piece to the film BREAST SELF-EXAMINATION.

Breast Cancer Series No. 2. National Cancer Institute. Cancer — What to Know, What to Do About It (ACS & NCI).

- Cancer of the Digestive Tract.
- Cancer of the Breast.
- Cancer of the Skin.
- Cancer of the Genito-Urinary Tract.
- Cancer of the Mouth and Respiratory Tract.
- Cancer of the Female Reproductive Organs.

d. Cancer studies released intermittently by the Public Health Service sent routinely to members of the Cancer Committee, Maine Medical Association.

N.B. The Department will, upon request, consider the purchase, for professional use, of cancer educational materials; the rent, purchase, or loan of films from designated sources for the use of medical societies, hospital staffs, the Cancer Committee of the State Medical Association, for specialized programs or allied needs as they may be required.

- 8. Diagnosis: Tissue diagnosis as furnished by the State Department of Health and funds are available to cover the cost of examining tissues when performed in the hospital operating the Tumor Clinic. In addition, certain laboratory tests and X-ray examinations will also be paid for in approved Tumor Clinics. In the hospital aid program, the State is paying for the part cost of the hospitalization of patients with cancer. The State Department of Health also finances nursing groups whose part-time function is the care of cancer patients in the home.
- 9. The State Department of Health also states that they will assist in survey to determine the prevalence of various types of cancer in the State, exclusive of cancer mortality, if the data can be furnished by the Maine Association of Pathologists.

Maine Cancer Society:

Educational: The program of nurse education is to be continued; funds are available for subsidization of post-graduate study at the Memorial Hospital. Application should be made to the Maine Cancer Society, and the coördinating agency here was voted to be the Postgraduate Medical Educational Committee of the Maine Medical Association.

Non-Educational:

- 1. Reimbursing the hospitals for the cost of X-ray and radium (which is the most expensive portion of the budget).
- 2. Payment of secretarial help for each Tumor Clinic.
- 3. Dressings for terminal care of cases at home, and medicines for terminal cases at home.
- 4. Testosterone and stilbesterol for patients who have been registered with the approved Tumor Clinics.
- 5. Sickroom supplies, including bed linen.
- 6. Transportation to clinics.
- 7. Deep X-ray therapy machines.
- 8. Radio-isotope equipment.

Respectfully submitted,

JOSEPH E. PORTER, M. D., *Chairman*,
FORREST B. AMES, M. D.,
ROMEO A. BELIVEAU, M. D.,
GORDON N. JOHNSON, M. D.,
JOHN F. REYNOLDS, M. D.,
MAGNUS F. RIDLON, M. D.

Veterans' Affairs Committee

To the Officers and Members of the Maine Medical Association:

I hereby submit my report as Chairman of the Veterans' Affairs Committee.

Along this particular line there has been little of concern to be acted upon. In good part there has been a nice working machine between the Doctors of the State and the Veterans' Administration. The one disturbing matter has been that

some of the doctors are not filling in their forms with adequate information, pertaining to diagnosis, consultations, progress notes and full treatment of patients. Again may I urge all doctors to coöperate with the Veterans' Administration by making sure that reports are complete and adequate before they are submitted to the Veterans' Care Department.

Respectfully submitted,

C. C. WEYMOUTH, M. D.,
Chairman.

In Memoriam

Call, Ernest V.,	Lewiston
Cappello, Joseph,	Portland
Carter, Frederick R.,	Portland
Comeau, Wilfred J.,	Bangor
Coombs, George A.,	Augusta
Emery, Harry S.,	Portland
Ham, Joseph,	Portland
Gottlieb, Julius,	Lewiston
Gousse, William L.,	Fairfield
Kalloch, Herbert F.,	Fort Fairfield
Larrabee, Fay F.,	Washburn
Morse, Waldron L.,	Springvale
Parizo, Harry L.,	Waterville
Pratt, Edwin F.,	Richmond
Smith, Frank A.,	Westbrook
Sumner, Charles M.,	West Sullivan
Wheet, Fred E.,	Westbrook
Thomas, Camp C.,	Greene

Program

99th ANNUAL SESSION MAINE MEDICAL ASSOCIATION

JUNE 22, 23, 24, 1952



THE SAMOSET

ROCKLAND, MAINE

Program Arranged by the Scientific Committee



LORING W. PRATT, M. D.

Chairman

INFORMATION

Registration:

Sunday: 2.00 P. M. to 6.00 P. M.

Monday and Tuesday: 8.30 A. M. to 6.00 P. M.

Registration headquarters will be in the Lobby of The Samoset. Every member and guest is requested to register and receive a badge on arrival.

Papers:

All papers read before this Association shall be its property for publication in "The Journal of the Maine Medical Association," and when read shall be deposited with the Acting Secretary, Esther M. Kennard.

Visiting Delegates:

Introduction of Visiting Delegates will take place Monday afternoon, June 23rd, at 4.00 P. M.

Meeting Places:

Consult Bulletin Board.

Technical Exhibits:

See Program for "Intermission to visit Technical Exhibits" on Monday and Tuesday.

Don't fail to register at each booth.

Scientific Exhibits:

Maine Society of Medical Technologists and Medical Technicians. Exhibit sponsored by Eastern Maine General Hospital, Bangor; Central Maine General Hospital, Lewiston; and Maine General Hospital, Portland.

U. S. Public Health Service—Fluoridation of Water.

Educational Exhibits:

Maine Cancer Society.

Maine Heart Association.

Maine Tuberculosis Association.

National Foundation for Infantile Paralysis.

Arranged by the Scientific Committee

Loring W. Pratt, M. D., Chairman

Robert W. Belknap, M. D.

Harry Brinkman, M. D.,

C. Lawrence Holt, M. D.

SUNDAY, JUNE 22, 1952

3.00 P. M.

First Meeting of the House of Delegates

Eugene H. Drake, M. D., President-elect, presiding

Invocation, Rev. Ferdinand D. Loungeway, Camden

7.00 P. M.

Dinner (Informal):

Speaker—J. Seelye Bixler, Ph. D.—President of Colby College

HEAD AND HEART JOIN AS WALTER SINGS

MONDAY, JUNE 23, 1952

9.00 A. M.

Surgical Panel—Acute Abdominal Emergencies:

Robert L. Allen, M. D., Rockland, Chairman

GASTRIC PERFORATIONS AND HEMORRHAGE

John F. Reynolds, M. D., Waterville

ACUTE PANCREATITIS

Waldo A. Clapp, M. D., Lewiston

ACUTE CHOLECYSTITIS

George E. Young, M. D., Skowhegan

ACUTE APPENDICITIS

Lloyd Brown, M. D., Bangor

DIVERTICULITIS OF THE COLON

Emerson H. Drake, M. D., Portland

Medical Panel—Antibiotics—When and Which:

Wilbur B. Manter, M. D., Bangor, Chairman

George J. Robertson, M. D., Waterville

Milan A. Chapin, M. D., Auburn

George O. Cummings, Jr., M. D., Portland

Frank W. Kibbe, M. D., Rockland

10.45 A. M.

Intermission to Visit Technical Exhibits

11.00 A. M.-12.00 Noon

General Assembly:

Presiding: C. Harold Jameson, M. D., President

Announcements: Loring W. Pratt, M. D., Chairman, Scientific Committee

Speaker: Harry S. N. Greene, M. D., Professor of Pathology, Yale University School of Medicine

Subject: THE SIGNIFICANCE OF THE HETEROTRANSPLANTABILITY OF HUMAN CANCER CELLS

12.00 Noon

Intermission to Visit Technical Exhibits

12.30 P. M.

Luncheon**Luncheon Meetings:**

County Presidents and Secretaries

Louis H. Bauer, M. D., President, American Medical Association, will be present

2.00 P. M.-4.00 P. M.

General Session:

Presiding: Loring W. Pratt, M. D.

THE SURGICAL TREATMENT OF PULMONARY INFECTIONS

John W. Strieder, M. D., Associate Professor of Thoracic Surgery, Harvard Medical School (Sponsored by the Maine Tuberculosis Association)

THE RETENTION OF THE INCOMPLETELY COVERED FOREIGN BODY IN TISSUES WITH SPECIAL APPLICATION TO THE EYE

William Stone, Jr., M. D., Staff of the Massachusetts Eye and Ear Infirmary

THE TREATMENT OF PREECLAMPSIA AND ECLAMPSIA WITH
PENICILLIN

George Van S. Smith, M. D., William H. Baker Pro-
fessor of Gynecology, Harvard Medical School

CAUSES OF DEATH IN THE NEWBORN AND WHAT CAN BE
DONE TO PREVENT THEM

Sidney S. Gellis, M. D., Boston Children's Hospital

4.00 P. M.

Introduction of Visiting Delegates

Election of President-Elect

4.30 P. M.

Second Meeting of the House of Delegates

Eugene H. Drake, M. D., President-elect, presiding

7.00 P. M.

Dinner (Dress Optional):

Speaker—Louis H. Bauer, M. D., President, American
Medical Association

TUESDAY, JUNE 24, 1952

9.30 A. M.

Obstetrical Panel:

Kenneth W. Sewall, M. D., Waterville, Chairman

1. BLEEDING IN THE THIRD TRIMESTER OF PREGNANCY

2. CAESAREAN SECTION

Theodore M. Stevens, M. D., Portland

PROLONGED LABOR AND PELVIC DISPROPORTION

Amy L. Cattley, M. D., Lewiston

MANAGEMENT OF THE THIRD STAGE OF LABOR

Donald Coulton, M. D., Bangor

Radiological Panel:

Jack Spencer, M. D., Portland, Chairman

Forrest B. Ames, M. D., Bangor

Roland D. Clapp, M. D., Portland

Langdon T. Thaxter, M. D., Portland

G. E. C. Logan, M. D., Portland

George W. Holmes, M. D., Belfast

Clark F. Miller, M. D., Auburn

Samuel Bluhm, M. D., Lewiston

William B. McAvoy, M. D., Waterville

Hugh A. Smith, M. D., Bangor

John D. Southworth, M. D., Togus

This group would like to have both diagnostic problem
cases and proven cases with unusual X-ray problems. Any-
one who has such films is urged to bring them.

11.15 A. M.

Intermission to Visit Technical Exhibits

11.30 A. M.

General Assembly:

Presiding: Robert W. Belknap, M. D.

THE MODERN CONCEPTS IN THE TREATMENT OF PERIPHERAL
ARTERIAL DISEASES

Robert R. Linton, M. D., Associate Professor of Medi-
cine, Harvard Medical School

12.00 Noon

Intermission to Visit Technical Exhibits

12.30 P. M.

Luncheon

2.30 P. M.

General Session:

Presiding: C. Lawrence Holt, M. D.

President's Address—C. Harold Jameson, M. D., Rock-
land

Medico-Legal Society:

Short Talks by Attorney General Alexander LaFleur,
Chief of State Police, Col. Francis F. McCabe, and
one or two others

The Role of the Medical Examiner in the Identification
of the Mutilated Body and the Time of Injury

Joseph E. Porter, M. D., Portland

Edward Flynn, District Attorney, Suffolk County,
Massachusetts

7.00 P. M.

Annual Banquet (Dress Optional):

Speakers:

Governor Frederick G. Payne

William B. Terhune, M. D., Associate Clinical Professor
of Psychiatry, Yale University School of Medicine

Subject: MAKING THE MOST OF MAN

Presentation of Fifty-Year Medals, Fifty-five and Sixty-
Year Bars

Presentation of Golf Prizes

SECTION MEETINGS

MONDAY, JUNE 23, 1952

Ophthalmological Section of Maine Medical Association:

Richard H. Dennis, M. D., Waterville, Presiding

9.30 A. M.

SYMPOSIUM—GLAUCOMA

Otis B. Tibbetts, M. D., Auburn, Chairman

Paul E. Floyd, M. D. Farmington

Dexter J. Clough, 2nd, M. D., Bangor

Richard J. Goduti, M. D., Portland

Saul R. Polisner, M. D., Portland

12.30 P. M.

SPECIAL LUNCHEON AND BUSINESS MEETING

1.30 P. M.

CONGENITAL GLAUCOMA—with movie of new operation

Harold G. Scheie, M. D., Associate Professor of Ophthalmology, University of Pennsylvania School of Medicine

ARTERIOSCLEROTIC AND HYPERTENSIVE VASCULAR CHANGES IN THE FUNDUS (Dr. Scheie)

Medico-Legal Society of Maine**10.00 A. M.**

JOINT BUSINESS MEETING WITH COUNTY ATTORNEYS' ASSOCIATION

ELECTION OF OFFICERS

Pediatric Section of Maine Medical Association:

Clair S. Bauman, M. D., Waterville, Presiding

9.30 A. M.

PREMATURE CARE

ORGANIZATION MEETING

ELECTION OF OFFICERS

Luncheon Meetings:

MAINE HEART ASSOCIATION

MAINE RADIOLOGICAL SOCIETY

MAINE TRUDEAU SOCIETY

12.30 P. M.**Maine Heart Association****2.30 P. M.**

"THE CHAIR TREATMENT OF CORONARY THROMBOSIS"

By Dr. F. B. Champlin, Waterville, Maine

"PATHOLOGY NOTED IN CORONARY OCCLUSION"

By Dr. I. I. Goodof, Waterville, Maine

"THE ROLE OF ANOXIA IN THE PATHOGENESIS OF CONGENITAL ENDOCARDIAL SCLEROSIS"

By Dr. Joseph E. Porter

"ELECTROCARDIOGRAPHIC CHANGES IN SOME METABOLIC DISORDERS"

By Drs. S. E. Herrick, Jr. and E. R. Blaisdell

"THE INFLUENCE OF HEART DISEASE UPON SURGICAL RISK"

By Drs. Jacob B. Dana and Robert L. Ohler, Veterans Administration, Togus, Maine

TUESDAY, JUNE 24, 1952**Otolaryngological Section of Maine Medical Association:**

John E. Whitworth, M. D., Bangor, Presiding

9.30 A. M.

RESPIRATORY DIFFICULTIES IN THE FIRST SIX MONTHS OF LIFE:

AS RELATED TO NOSE, THROAT AND PHARYNX

Chester F. Hogan, M. D., Houlton

AS RELATED TO THE LARYNX

George O. Cummings, Jr., M. D., Portland

AS RELATED TO THE TRACHEA, BRONCHI AND ESOPHAGUS

Merton N. Flanders, M. D., Lewiston

SPECIAL NOTICES**Honorary Medals**

The Association's Honorary Medals will be presented at the Annual Banquet, Tuesday evening, June 24th.

Fifty-Year Lapel Pins to the following members who were graduated from Medical School in 1902:

Cumberland County Medical Society

Franklin A. Ferguson, M. D., Portland

Boston University School of Medicine, 1902

James G. S. Jamieson, M. D., Portland

University of Edinburgh, 1902

Kennebec County Medical Society

Richard H. Stubbs, M. D., Augusta

Harvard Medical School, 1902

Knox County Medical Society

Charles H. Leach, M. D., Tenants Harbor

Bowdoin Medical School, 1899

Sixty-Year Bars to the following members who received their Fifty-Year Medals in June, 1942:

Franklin County Medical Society

Verdeil O. White, M. D., Springvale

Waldo County Medical Society

Eugene L. Stevens, M. D., Belfast

Fifty-Five Year Bars will be presented to the following members who received their Fifty-Year Medals in June, 1947:

Androscoggin County Medical Society

Louis B. Hayden, M. D., Livermore Falls

Clarence C. Peaslee, M. D., Portland

Ward J. Renwick, M. D., Auburn

Aroostook County Medical Society

Louis N. Albert, M. D., Van Buren

Art - Hobby Exhibit

The second annual Art - Hobby Exhibit will take place during the annual session.

Golf Tournament

Francis A. Winchenbach, M. D., Bath, Chairman.

Convention Rates

THE SAMOSET

Rockland, Maine

The Samoset:

- Double room with bath—\$13.00 per person per day.
- Single room with bath—\$15.00 per day.
- Double or single room without bath—\$11.00 or \$12.00 per person per day.

Meals for non-registered guests :

Breakfast	\$1.50
Luncheon	2.50
Dinner	4.00
Banquet	4.00

Cottages—on the hotel grounds:

- Double room—\$11.00 or \$12.00 per person per day.
- Single room—\$13.00 per day.

For Reservations—write to Mr. Roger P. Sonnabend, General Manager, The Samoset, Rockland, Maine.

- The Samoset provides wide choice of recreational facilities :
- Free Golf—on adjoining hotel course.
 - Tennis—on championship courts.
 - Sailing—in hotel's own boats.
 - Fishing—outstanding lake, stream and ocean.
 - Entertainment—complete for the whole family.
 - Swimming—in ocean and pool.

MAKE YOUR RESERVATIONS TODAY

HOSPITAL STAFF MEETINGS

Open to the Profession

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital	2nd Thursday
	Notre Dame Hospital	2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General	2nd Thursday
	St. Mary's General	2nd Monday
Portland	Maine Eye and Ear Infirmary	1st Tuesday
	Maine General	2nd Friday
	Mercy	4th Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Monday
Waterville	Sisters	2nd Tuesday
	Thayer	Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.

PROGRAM

Woman's Auxiliary

to the

Maine Medical Association

Fourth Annual Convention, June 22, 23, 24, 1952

The Samoset

Rockland, Maine

INFORMATION

Meetings of the Woman's Auxiliary will be held at The Samoset. See Bulletin Board for location of meetings as well as any changes in the program.

Facilities for Bridge and Canasta will be available.

Dinner meetings will be held in conjunction with the Maine Medical Association. See their Official Program for details.

SUNDAY, JUNE 22, 1952

3.00 P. M.

to

6.00 P. M. Registration and Social Hour
(Registration fee, \$1.00)

7.00 P. M. Dinner (Informal)

MONDAY, JUNE 23, 1952

9.00 A. M.

to

6.00 P. M. Registration

9.00 A. M. Executive Board and Council Meeting

9.30 A. M. County Delegates, Board and Council Meeting

10.30 A. M. Excursion around the Bay
(Bring extra warm clothing for the sail)

12.30 P. M. Luncheon honoring Past Presidents and County Presidents of the Woman's Auxiliary to the Maine Medical Association. Guests will include Presidents and Presidents-elect from the New England States.

2.00 P. M. Meeting open to all women attending the Maine Medical Association Annual Session

Greetings from the Maine Medical Association
—C. Harold Jameson, M. D., President

Pledge, Minutes, Treasurer's Report, Introduction of Guests, President's Report, Installation of Officers

7.00 P. M. Dinner (Dress Optional)

TUESDAY, JUNE 24, 1952

9.00 A. M.

to

6.00 P. M. Registration

10.00 A. M. Golf Tournament and Putting Contest

Conducted Tour of Montpelier, Farnsworth Museum, Antique Shops and Gift Shops

12.30 P. M. Lunch

2.30 P. M.

to

3.30 P. M. Trends in Decorating
By Mrs. DeWitt C. Brewster, Belfast, Maine

7.00 P. M. Annual Banquet of the Maine Medical Association (Dress Optional)

PROGRAM COMMITTEE

Chairman—Mrs. Harry G. Tounge

Hostesses—Mrs. Herman J. Weisman
Mrs. C. Harold Jameson

Registration—Mrs. Paul C. Millington

Identification—Mrs. Harry G. Tounge

Prizes—Mrs. Robert L. Allen

Sail (Excursion around Bay)—Mrs. Howard L. Apollonio

Golf—Mrs. Robert L. Allen

Transportation and Information — Mrs. Frederick C. Dennison

Nominating Committee Chairman—Mrs. Merrill S. F. Greene

Publicity—Mrs. Howard L. Apollonio

Resolutions—Mrs. John S. Houlihan

Necrology—Mrs. James N. Shippee

OFFICIAL DELEGATES — 1952

County Medical Societies

FIRST DISTRICT

Cumberland County Medical Society

Delegates (2 years):

John R. Lincoln, M. D., 22 Arsenal St., Portland
Bernerd H. Burbank, M. D., 275 Cottage Rd., South
Portland
Alvin A. Morrison, M. D., 57 Deering St., Portland
Emerson H. Drake, M. D., 29 Deering St., Portland

(1 year):

Charles R. Geer, M. D., 690 Congress St., Portland
G. E. C. Logan, M. D., 131 State St., Portland
John M. Bischoffberger, M. D., Naples
Eugene C. McManamy, M. D., 39 Deering St., Portland

Alternates (2) years:

Henry M. Tabachnick, M. D., 110 Park Ave., Portland
Leo J. McDermott, M. D., 151 Vaughan St., Portland
Ronald A. Bettle, M. D., Brunswick
William C. Burrage, M. D., 57 Deering St., Portland

(1 year):

Daniel F. Hanley, M. D., Brunswick
Henry A. Hudson, M. D., Bridgton
Ralph Heifetz, M. D., 173 State St., Portland
Sidney R. Branson, M. D., 37 Main St., South Windham

York County Medical Society

Delegates:

Carl E. Richards, M. D., 28 Winter St., Sanford
James H. Macdonald, M. D., 103 Main St., Kennebunk
Charles W. Kinghorn, M. D., 4 Wentworth St., Kittery

Alternates:

Kenneth J. Cunco, M. D., 31 Summer St., Kennebunk
Melvin Bacon, M. D., 206 Main St., Sanford
Edward W. Holland, M. D., 28 Winter St., Sanford

SECOND DISTRICT

Androscoggin County Medical Society

Delegates:

Waldo A. Clapp, M. D., 215 College St., Lewiston
Romeo A. Beliveau, M. D., 89 Pine St., Lewiston
Eustache N. Giguere, M. D., 109 Cedar St., Lewiston
Charles W. Steele, M. D., 472 Main St., Lewiston

Alternates:

Robert A. Frost, M. D., 108 Summer St., Auburn
Clark F. Miller, M. D., 778 Minot Ave., Auburn
Wallace E. Viles, M. D., Turner
Bertrand A. Beliveau, M. D., 56 Howe St., Lewiston

Franklin County Medical Society

Delegate:

Currier C. Weymouth, M. D., 83 Main St., Farmington

Alternate:

George L. Pratt, M. D., 7 Main St., Farmington

Oxford County Medical Society

Delegates:

Dexter E. Elsmore, M. D., Dixfield
Albert M. Royal, M. D., 82 Maine Ave., Rumford

Alternates:

Pierre B. Aucoin, M. D., 77 Rumford Ave., Rumford
James A. MacDougall, M. D., 303 Penobscot St., Rum-
ford

THIRD DISTRICT

Knox County Medical Society

Delegates:

Wesley N. Wasgatt, M. D., 41 Talbot Ave., Rockland
Frederick C. Dennison, M. D., Main St., Thomaston

Alternates:

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Gastroscopy: An Important Diagnostic Procedure—Continued from page 189

carcinoma, but on section it was found to be an esophageal tumor with extension into the stomach.

This difficult case illustrates some of the gastroscopic difficulties in dealing with lesions at the cardia. In retrospect, the local bleeding at the region of the suspected lesion should have aroused more suspicion.

One recent case, age 61, in the series showed a carcinoma of the fundus by X-ray. At gastroscopy the Ewald tube was easily inserted, but the gastroscope could not be introduced into the stomach. At operation a huge inoperable tumor was present up to and including the esophago-gastric region.

A 59-year-old patient with a rather similar history, X-ray and gastroscopy findings poses a point for thought. A definite X-ray diagnosis of gastric cancer was made with one observer diagnosing an extrinsic pressure defect. Before the gastroscope was introduced, the Ewald tube produced some blood. There was no free hydrochloric acid. The gastroscope met with resistance, and could not be introduced into the stomach. The clinical and laboratory facts, plus the presence of obstruction and blood at gastroscopy, prompted an inferential diagnosis of

cancer of the cardia. The patient was explored and a large spleen, which caused the gastric defect, was removed. The stomach was opened and thoroughly explored. The symptoms disappeared after splenectomy. A repeat X-ray showed the same defect. Gastroscopy will be repeated.

The lessons offered by these two cases are self-explanatory.

SUMMARY AND CONCLUSIONS

The indications and contra-indications for gastroscopy have been reviewed. It has been pointed out that this safe procedure is an exceedingly helpful adjunct in gastro-intestinal diagnosis. Cases have been cited which represent the numerous ways in which gastroscopy has aided in the handling of perplexing upper gastro-intestinal tract problems at Togus, Maine.

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 Hawkes, Richard S.,
 Heifetz, Ralph,
 Herrick, Stanley E.,
 Holt, C. Lawrence,
 Holt, William,
 Hudson, Henry A.,
 Huntress, Roderick L.,
 Ives, Howard R., Jr.,
 Jacobson, Payson B.,
 Johnson, Albert C.,
 Johnson, Henry P.,
 Johnson, Oscar R.,
 Kupelian, Nessib S.,
 Lamb, Henry W.,
 Lape, C. Philip,
 Lappin, John J.,
 Laughlin, K. Alexander,
 Leary, Gerald C.,
 Leighton, Adam P.,
 Leighton, Wilbur F.,
 Libby, Harold E.,
 Lincoln, John R.,
 Loewenstein, George,
 Logan, G. E. C.,
 810 Main St., Westbrook
 57 Deering St., Portland
 131 State St., Portland
 Steep Falls
 672 Ocean Ave., Portland
 10 Congress Sq., Portland
 131 State St., Portland
 389 Congress St., Portland
 131 State St., Portland
 265 West Prom., Portland
 47 Deering St., Portland
 47 Deering St., Portland
 142 High St., Portland
 73 Deering St., Portland
 782 Main St., Westbrook
 45 Deering St., Portland
 45 Deering St., Portland
 Fryeburg
 169 State St., Portland
 690 Congress St., Portland
 36 Cumberland St., Brunswick
 53 Deering St., Portland
 Fryeburg
 52 Deering St., Portland
 763 Congress St., Portland
 29 Deering St., Portland
 58 Deering St., Portland
 201 State St., Portland
 331 Main St., Cumberland Mills
 55 Stroudwater St., Westbrook
 312 Congress St., Portland
 22 Arsenal St., Portland
 73 Deering St., Portland
 38 Deering St., Portland
 131 State St., Portland
 83 West St., Portland
 173 State St., Portland
 107 Main St., Yarmouth
 690 Congress St., Portland
 690 Congress St., Portland
 690 Congress St., Portland
 43 Deering St., Portland
 58 Deering St., Portland
 704 Congress St., Portland
 38 Deering St., Portland
 46 Deering St., Portland
 Freeport
 12 Pine St., Portland
 131 State St., Portland
 50 Deering St., Portland
 Brunswick
 46 Deering St., Portland
 Cumberland Center
 47 Deering St., Portland
 173 State St., Portland
 12 Deering St., Portland
 29 Deering St., Portland
 14 Deering St., Portland
 Bridgton
 10 Congress Sq., Portland
 31 Deering St., Portland
 59 Deering St., Portland
 45 Deering St., Portland
 32 Deering St., Portland
 18 Deering St., Portland
 Pownal State School, Pownal
 77 Ocean Ave., Portland
 49 Deering St., Portland
 171 State St., Portland
 201 State St., Portland
 144 State St., Portland
 192 State St., Portland
 192 State St., Portland
 310 Main St., Westbrook
 22 Arsenal St., Portland
 Great Chebeague Island
 144 State St., Portland
 Lombard, Reginald T.,
 Lorimer, Robert V.,
 Love, Robert B.,
 Lovely, David K.,
 MacVane, William L., Jr.,
 Maier, Paul,
 Maltby, George L.,
 Marshall, Donald F.,
 Marston, Paul C.,
 Martin, Ralf,
 Martin, Thomas A.,
 McAdams, William R.,
 McCann, Eugene C.,
 McCrum, Philip H.,
 McDermott, Leo J.,
 McFarland, Edward A.,
 McIntire, Barron F., Jr.,
 McLean, E. Allan,
 McManamy, Eugene P.,
 Melnick, Jacob,
 Miller, Thor,
 Mills, Nathaniel,
 Monkhouse, William A.,
 Moore, Roland B.,
 Morrison, Alvin A.,
 Moulton, Albert W.,
 Moulton, Albert W., Jr.,
 O'Donnell, Eugene E.,
 Olmsted, Burton L.,
 Ottum, Alvin E.,
 Parker, James M.,
 Peaslee, C. Capen, Jr.,
 Penta, Walter E.,
 Pogue, Jackson S.,
 Polisner, Saul R.,
 Porter, Joseph E.,
 Richardson, C. Earle,
 Robinson, Carl M.,
 Rowe, Daniel M.,
 Russell, Walter,
 Santoro, Domenico A.,
 Sapiro, Howard M.,
 Schwartz, Carol,
 Scolten, Adrian H.,
 Shanahan, William H.,
 Skillin, Charles E.,
 Sowles, Horace K.,
 Spencer, Jack,
 Stevens, Theodore M.,
 Tabachnick, Henry M.,
 Thaxter, Langdon T.,
 Thompson, Philip P., Jr.,
 Tougas, Raymond A.,
 Upham, Roscoe C.,
 Ward, John V.,
 Webber, Isaac M.,
 Webber, M. Carroll,
 Weeks, DeForest,
 Wellington, J. Foster,
 Whittier, Alice A. S.,
 Wight, Donald G.,
 Williams, Ralph E.,
 Woodman, Arthur B.,
 Zolov, Benjamin,
 793 Main St., South Portland
 150 State St., Portland
 Gorham
 73 Deering St., Portland
 211 State St., Portland
 723 Congress St., Portland
 203 State St., Portland
 142 High St., Portland
 Kezar Falls
 58 Deering St., Portland
 203 State St., Portland
 723 Congress St., Portland
 49 Deering St., Portland
 188 State St., Portland
 151 Vaughan St., Portland
 Brunswick
 Yarmouth
 29 Deering St., Portland
 39 Deering St., Portland
 333 Congress St., Portland
 752 Main St., Westbrook
 Pownal State School, Pownal
 131 State St., Portland
 201 State St., Portland
 57 Deering St., Portland
 180 State St., Portland
 180 State St., Portland
 32 Deering St., Portland
 73 Deering St., Portland
 150 State St., Portland
 31 Deering St., Portland
 339 Woodford St., Portland
 316 Woodford St., Portland
 529 Gilmore Ave., Trafford, Pa.
 143 Vaughan St., Portland
 22 Arsenal St., Portland
 3 Cumberland St., Brunswick
 31 Deering St., Portland
 306 Congress St., Portland
 22 Arsenal St., Portland
 756 Congress St., Portland
 175 State St., Portland
 38 Deering St., Portland
 32 Deering St., Portland
 1231 Forest Ave., Portland
 131 State St., Portland
 131 State St., Portland
 31 Deering St., Portland
 148 State St., Portland
 110 Park Ave., Portland
 31 Deering St., Portland
 704 Congress St., Portland
 8 Cumberland St., Brunswick
 15 Crescent St., Biddeford
 131 State St., Portland
 29 Deering St., Portland
 735 Stevens Ave. Portland
 158 Pleasant Ave., Portland
 655 Congress St., Portland
 143 Neal St., Portland
 30 Mitchell Rd., South Portland
 Freeport
 Falmouth Foreside
 296 Congress St., Portland

AFFILIATE MEMBER

Gehring, Edwin W., 284 Ocean Ave., Portland

SENIOR MEMBERS

Barker, Nathaniel B. T., Yarmouth
 Beach, S. Judd, 704 Congress St., Portland
 Carmichael, Frank E., 72 Deering St., Portland
 Cragin, Charles L., 831 Congress St., Portland
 Ferguson, Franklin A., 9 Deering St., Portland
 Fogg, C. Eugene, 35 Deering St., Portland
 Hills, Louis L., 816 Main St., Westbrook
 Jamieson, James G. S., 82 High St., Portland

Patterson, James, 614 Highland Ave., South Portland
 Sturgis, Karl B., Intervale
 Webb, Harold R., 114 Main St., Brunswick
 Welch, Francis J., 44 Deering St., Portland
 Wescott, Clement P., Windham Hill

HONORARY MEMBERS

Bradford, William H., 133 Coyle St., Portland
 Brock, Henry H., Alfred
 Brown, Luther A., 13 Deering St., Portland
 Foster, Albert D., Bay Shore Drive, Falmouth Foreside
 Haskell, Alfred W., 142 High St., Portland
 Haskell, Harris B., 9 Bramhall St., Portland
 Howard, Harvey, Freeport
 Sawyer, Samuel G., 658 Watertown St., Newtonville, Mass.
 Stetson, Elbridge G. A., Brunswick
 Tetreau, Thomas, 17 Tremont St., Portland
 Tobie, Walter E., 3 Deering St., Portland
 Webster, Fred P., 101 Vaughan St., Portland

MILITARY SERVICE

Cook, Edward M.,
 4966 West Point, Loma Blvd., San Diego, Cal.
 Smith, Kenneth E., 1077 Shirley St., Winthrop, Mass.
 Ventimiglia, William A.,
 Casual Personnel Section, A.P.O., 613, c/o P.M.,
 San Francisco, Cal.

FRANKLIN COUNTY

President—Wallace H. Duffy, M. D.
Secretary-Treasurer—Paul E. Floyd, M. D.

ACTIVE MEMBERS

Brinkman, Harry, 47 Perham St., Farmington
 Chase, Philip B., Anson St., Farmington
 Colley, Maynard B., Wilton
 Duffy, Wallace H., 100 Main St., Farmington
 Eastman, Charles W., Livermore Falls
 Fichtner, Paul, Rangeley
 Floyd, Paul E., 2 Middle St., Farmington
 Moulton, John H., Rangeley
 Reed, James W., 18 Main St., Farmington
 Thompson, Cecil F., Phillips
 Weymouth, Currier C., 83 Main St., Farmington
 Zikel, Herbert M., Wilton

AFFILIATE MEMBER

Brown, Elmer J., 81 Main St., Farmington

SENIOR MEMBERS

Floyd, Albion E., New Sharon
 Pratt, George L., 7 Main St., Farmington

HONORARY MEMBER

White, Verdeil O., 24 Howard St., Springvale, East Dixfield

HANCOCK COUNTY

President—Silas A. Coffin, M. D.
Secretary-Treasurer—Arthur M. Joost, Jr., M. D.

ACTIVE MEMBERS

Babcock, Harold S., Castine
 Coffin, Ernest L., Northeast Harbor
 Coffin, Silas A., 39 High St., Bar Harbor
 Crowe, James H., 121 Main St., Ellsworth
 Gray, Philip L., Blue Hill
 Hanson, Joseph H., 272 Arcadia St., Toledo, Ohio
 Joost, Arthur M., Jr., Bucksport
 Knowlton, Charles C., Ellsworth
 Kopfmann, Harry, Deer Isle
 Larrabee, Charles F., Bar Harbor
 Millstein, Hyman, Southwest Harbor
 Morrison, Charles C., Bar Harbor

O'Meara, Edward S., Ellsworth
 Parcher, George, Ellsworth
 Russell, Robert F., Penobscot
 Thegen, W. Edward, Bucksport
 Torrey, Marcus A., 75 State St., Ellsworth
 Trowbridge, Mason, Jr., Ellsworth
 Weymouth, Raymond E., 194 Main St., Bar Harbor
 Wilbur, Herbert T., Southwest Harbor

HONORARY MEMBERS

Holt, Hiram A., Winter Harbor
 (Little, Clarence Cook, Bar Harbor)

MILITARY SERVICE

Knickerbocker, Charles H.,
 106 E. Marshall St., Falls Church, Virginia

KENNEBEC COUNTY

President—Francis H. Sleeper, M. D.
Secretary-Treasurer—Arch H. Morrell, M. D.

ACTIVE MEMBERS

Abbott, Henry W., 116 Main St., Waterville
 Bauman, Clair S., 177 Main St., Waterville
 Beckerman, Stanley C., Waterville
 Bisson, Napoleon, 29 Common St., Waterville
 Bourassa, Harvey J., 50 Main St., Waterville
 Brann, Henry A., 31 Western Ave., Augusta
 Breard, J. Alfred, 15 Summer St., Waterville
 Bull, Frank B., 72 Church St., Gardiner
 Cates, Samuel C., East Vassalboro
 Champlin, Frederic B., 216 Main St., Waterville
 Chasse, Richard L., 173 Main St., Waterville
 Cook, Aaron, Waterville
 Cordray, David P., 31 Western Ave., Augusta
 Dachslager, Philip, 21 Western Ave., Augusta
 Dennis, Richard H., 33 College Ave., Waterville
 Dore, Clarence E., 65 Temple St., Waterville
 Dunn, Robert H., Veterans' Adm., Togus
 Elkins, Harry, State Hospital, Augusta
 Emanuel, Meyer, Veterans' Adm., Togus
 Ervin, Edmund N., 33 College Ave., Waterville
 Fallon, Richard, 43 Green St., Augusta
 Fay, Thomas F., 284 Water St., Augusta
 Fisher, Dean, State House, Augusta
 Fisher, Samson, 177 Main St., Waterville
 Foote, Edward L., Veterans' Adm., Togus
 Giddings, Paul D., 31 Western Ave., Augusta
 Giesen, Joseph H., 35 College Ave., Waterville
 Gingras, Adolphe J., 99 Water St., Augusta
 Goodof, Irving I., Thayer Hospital, Waterville
 Goodrich, Blynn O., 165 Main St., Waterville
 Gould, George I., 79 Main St., Richmond
 Guite, L. Armand, 27 Main St., Waterville
 Harlow, Edwin W., 177 Main St., Waterville
 Herring, Leon D., Winthrop
 Hill, Frederick T., 177 Main St., Waterville
 Hill, Howard F., 33 College Ave., Waterville
 Hirschberger, Celia, 44 Main St., Waterville
 Hurd, Allan C., 72 Church St., Gardiner
 Jackson, Elmer H., Depositors Trust Bldg., Augusta
 Kagan, Samuel H., 283 Water St., Augusta
 Lambert, Greenlief H.,
 112 S. Dianthus St., Manhattan Beach, Calif.
 Langer, Ella, State House, Augusta
 Lepore, Anthony E., 72 Church St., Gardiner
 Lubell, Moses F., 50 Roosevelt Ave., Waterville
 Marquardt, Matthias, State Hospital, Augusta
 Mathews, Hugh J., Jr., Gardiner
 McAvoy, William B., Waterville
 McKay, Roland L., 284 Water St., Augusta
 McLaughlin, Clarence R., 345 Water St., Gardiner
 McLaughlin, Ivan E., 345 Water St., Gardiner
 McQuillan, Arthur H., 177 Main St., Waterville
 McWethy, Wilson H., 31 Western Ave., Augusta

Melendy, Oakley A.,
 Metzgar, John G.,
 Michaud, Joseph H. C.,
 Milliken, Howard H.,
 Moore, Arnold W.,
 Moore, Valentine J.,
 Morrell, Arch H.,
 Murphy, Norman B.,
 Nelson, John A.,
 Pomerleau, Ovid F.,
 Poulin, James E.,
 Pratt, Loring W.,
 Priest, Maurice A.,
 Provost, Helen C.,
 Provost, Pierre C.,
 Reynolds, John F.,
 Reynolds, Ralph L.,
 Richards, Lee W., Jr.,
 Robertson, George J.,
 Runyon, William N.,
 Sanders, Stephen W.,
 Schmidt, Lorrimer M.,
 Sewall, Kenneth W.,
 Shelton, M. Tieche,
 Shippee, James N.,
 Simpson, Margaret R.,
 Sleeper, Francis H.,
 Small, Harold E.,
 Sommerfeld, Kurt A.,
 Staciva, Stanley J.,
 Southworth, John D.,
 Stinchfield, Allan J.,
 Tashiro, Sabro,
 Towne, Charles E.,
 Valentine, John B.,
 Wilson, Robert W.,

SENIOR MEMBERS

Mitchell, Roscoe L.,
 Newcomb, Charles H.,
 Piper, John O.,
 Risley, Edward H.,
 Shannon, Charles E. G.,
 Stubbs, Richard H.,
 Tyson, Forrest C.,
 Williams, Edmund P.,

HONORARY MEMBERS

Milliken, Howard A.,
 Odiorne, Joseph E.,
 Towne, John G.,
 Turner, Oliver W.,

MILITARY SERVICE

Gingras, Napoleon J.,

KNOX COUNTY

President—Gilmore W. Soule, M. D.
Secretary-Treasurer—Robert L. Allen, M. D.

ACTIVE MEMBERS

Allen, Robert L.,
 Apollonio, Howard L.,
 Brown, Donald H.,
 Brown, Freeman F.,
 Brown, Freeman F., Jr.,
 Campbell, Fred G.,
 Dennison, Frederick C.,
 Earle, Ralph P.,
 Green, Archibald F.,
 Hinckley, Harry F., Jr.,
 Jameson, C. Harold,
 Jones, Paul A.,

21 Western Ave., Augusta
 175 Water St., Augusta
 76 Main St., Waterville
 105 Second St., Hallowell
 State Hospital, Augusta
 Thayer Hospital, Waterville
 State House, Augusta
 31 Western Ave., Augusta
 Veterans' Adm., Togus
 177 Main St., Waterville
 177 Main St., Waterville
 177 Main St., Waterville
 State House, Augusta
 48 Green St., Augusta
 48 Green St., Augusta
 101 Main St., Waterville
 101 Main St., Waterville
 21 Western Ave., Augusta
 33 College Ave., Waterville
 20½ Middle St., Augusta
 120 Main St., Winthrop
 Veterans' Adm., Togus
 173 Main St., Waterville
 21 Western Ave., Augusta
 122 Main St., Winthrop
 P. O. Box 275, Togus
 State Hospital, Augusta
 31 Grove St., Augusta
 6 Maine Ave., Gardiner
 Veterans' Adm., Togus
 Veterans' Adm., Togus
 6 Warren St., Hallowell
 1903 E. 31st St., Baltimore, Md.
 50 Main St., Waterville
 25 Patterson St., Augusta
 Veterans' Adm., Togus

Kibbe, Frank W.,
 Lawry, Oram R.,
 Leach, Charles H.,
 Luce, Barbara G.,
 Mann, David V.,
 McLellan, William A.,
 Millington, Paul A.,
 Morse, Edward K.,
 Platt, Anna,
 (Winter Address: 311 Druid Rd., Clearwater, Florida)
 Soule, Gilmore W.,
 Tounge, Harry G.,
 Wasgatt, Wesley N.,
 Waterman, Richard,
 Weisman, Herman J.,
 Worthing, Verla E.,

SENIOR MEMBER

North, Charles D.,

HONORARY MEMBER

Hall, Walter D.,

MILITARY SERVICE

Beaer, Robert H.,

LINCOLN-SAGADAHO COUNTRIES

President—John F. Dougherty, M. D.
Secretary-Treasurer—Marion W. Westermeyer, M. D.

ACTIVE MEMBERS

Barrows, Harris C.,
 Belknap, Robert W.,
 Belknap, Samuel L.,
 Dougherty, John F.,
 Goodrich, John P.,
 Gregory, Philip O.,
 Hamilton, Virginia C.,
 Hawkins, Donald B.,
 Lenfest, Stanley R.,
 Nichols, Arthur A.,
 Parsons, Neil L.,
 Powell, Ralph C.,
 Smith, Jacob,
 Smith, Joseph I.,
 Stetson, Rufus E.,
 Stott, Ardenne A.,
 Westermeyer, Marion W.,
 Wilson, Harry M.,
 Winchenbach, Francis A.,

AFFILIATE MEMBERS

Dash, George E.,
 Desjardins, A. W.,

SENIOR MEMBERS

Bousfield, Cyril E.,
 Day, DeForest S.,
 Kershner, Warren E.,
 Morin, Harry F.,
 Sylvester, Philip H.,

MILITARY SERVICE

Dalrymple, Sidney C.,

OXFORD COUNTY

President—Edward L. Reeves, M. D.
Secretary-Treasurer—Dexter E. Elsemore, M. D.

ACTIVE MEMBERS

Adams, Lester,
 Aucoin, Pierre B.,
 Boynton, Willard H.,
 Broughton, David S.,
 Defoe, Garfield G.,

Dixon, Walter G.,
Elsemore, Dexter E.,
Howard, Henry M.,
Hubbard, Roswell E.,
Kay, Edwin,
MacDougall, James A.,
McCormack, Roland L.,
Moore, Beryl M.,
Nangle, Thomas P.,
Nelson, Chesley W.,
Noyes, Harriett L.,
Oestrich, Alfred,
Reeves, Edward L.,
Reeves, Helene M.,
Rowe, Linwood M.,
Royal, Albert P., Jr.,

16 Deering St., Norway
Dixfield
105 Franklin St., Rumford
Waterford
31 Frye St., Lewiston
303 Penobscot St., Rumford
245 Main St., Norway
Oxford
West Paris
121 Main St., Norway
114 Congress St., Rumford
20 Congress St., Rumford
179 Sabattus St., Lewiston
179 Sabattus St., Lewiston
250 Penobscot St., Rumford
82 Maine Ave., Rumford

AFFILIATE MEMBER

Stanwood, Harold W.,

5 Franklin St., Rumford

SENIOR MEMBERS

Greene, John A.,
Pearson, Henry,
Stewart, Delbert M.,

96 Congress St., Rumford
Brownfield
15 Main St., South Paris

HONORARY MEMBERS

McCarthy, Eugene M.,
Tibbetts, Raymond R.,

82 Maine Ave., Rumford
Bethel

PENOBSCOT COUNTY

President—Wesley C. McNamara, M. D.
Secretary-Treasurer—Herbert C. Scribner, M. D.

ACTIVE MEMBERS

Adams, Asa C.,
Adams, Winford C.,
Albro, Ward A.,
Ames, Forrest B.,
Barnes, Herbert F.,
Barrett, Robert J., Jr.,
Blaisdell, Carl E.,
Blaisdell, William B.,
Bridges, Donald E.,
Brown, Eugene E.,
Brown, Lloyd,
Burke, Paul W.,
Butler, Harry,
Butterfield, Wilfred I.,
Clough, Dexter J., 2nd,
Cornell, Robert C.,
Coulton, Donald,
Curran, Edward L.,
Cutler, Lawrence M.,
Dietrich, Mary M.,
Duffey, Richard V.,
Dunham, Rand A.,
Dwyer, Clement S.,
Emerson, W. Merritt,
Emery, Clarence, Jr.,
Emery, Frederick C.,
Feeley, J. Robert,
Fellows, Albert W.,
Hall, Walter L. H.,
Higgins, George I.,
Hill, Allison K.,
Horton, George H.,
Houlihan, John S.,
Irwin, Carl W.,
Kellogg, Robert O.,
Lezberg, Joseph,
Liebermann, Arthur R.,
Lippmann, Werner O.,

Main St., Orono
66 Washington St., Brewer
47 Broadway, Bangor
255 Hammond St., Bangor
State Hospital, Bangor
209 State St., Bangor
42 Broadway, Bangor
205 French St., Bangor
263 State St., Bangor
276 State St., Bangor
316 State St., Bangor
5 High St., Newport
77 Broadway, Bangor
119 Main St., Lincoln
224 State St., Bangor
Orono
326 State St., Bangor
159 State St., Bangor
31 Grove St., Bangor
R. R. 3, South Brewer
255 North Main St., Brewer
East Millinocket
205 French St., Bangor
131 State St., Bangor
92 Essex St., Bangor
3 Third St., Bangor
316 State St., Bangor
52 Ohio St., Bangor
50 North 4th St., Old Town
Newport
113 Somerset St., Bangor
247 Hammond St., Bangor
209 State St., Bangor
316 State St., Bangor
316 State St., Bangor
116 State St., Bangor
209 State St., Bangor
Veterans' Adm., Togus

Macdonald, Donald F.,
Manter, Wilbur B.,
McNamara, Wesley C.,
McNeil, Harry D.,
McQuoid, Robert M.,
Memmelaar, Joseph E.,
Merrill, Urban H.,
Miragliuolo, Leonard G.,
Morris, Lloyd E., Jr.,
Moulton, Manning C.,
Munce, Richard T.,
Osler, Jay K.,
Pearson, John J., Jr.,
Pooler, Harold A.,
Pressey, Harold E.,
Purinton, William A.,
Ridlon, Magnus F.,
Ruhlin, Carl W.,
Scribner, Herbert C.,
Sewall, Elmer M.,
Shaper, Benjamin L.,
Shubert, Alice J.,
Shurman, Hans,
Silsby, Samuel S.,
Skinner, Peter S.,
Smith, Hugh A.,
Stebbins, Arthur P.,
Strout, Arthur C.,
Stull, Joseph B.,
Sullivan, John R.,
Taylor, Cornelius J.,
Taylor, Herbert L.,
Theriault, L. L.,
Thomas, Philip B.,
Todd, Albert C.,
Vickers, Martyn A.,
Wadsworth, Richard C.,
Wagner, Samuel L.,
Warren, Lyman O.,
Weatherbee, George B.,
Weisz, Hans,
White, William J.,
Whitney, Byron V.,
Whitworth, John E.,
Woodcock, Allan,
Woodcock, John A.,
Wright, LaForest J.,
Young, Ernest T.,

263 State St., Bangor
1 Fern St., Bangor
8 Lee St., Lincoln
58 Hammond St., Bangor
39 Columbia St., Bangor
54 Forest Ave., Bangor
13 Water St., Newport
130 Hammond St., Bangor
489 State St., Bangor
5 Grove St., Bangor
262 State St., Bangor
74 Birch St., Bangor
Old Town
State Hospital, Bangor
23 Hammond St., Bangor
15 Ohio St., Bangor
99 Broadway, Bangor
205 French St., Bangor
259 Union St., Bangor
Orono
73 Broadway, Bangor
127 Leighton St., Bangor
10 State St., Dexter
11 Ohio St., Bangor
112 Ohio St., Bangor
768 Union St., Bangor
209 State St., Bangor
Dexter
489 State St., Bangor
59 Spruce St., Millinocket
16 State St., Bangor
Dexter
197 Center St., Old Town
209 French St., Bangor
410 South Main St., Brewer
268 State St., Bangor
489 State St., Bangor
Winterport
156 North Main St., Brewer
Hampden Highlands
164 Main St., Lincoln
10 Water St., Howland
156 State St., Bangor
116 Hammond St., Bangor
35 Second St., Bangor
35 Second St., Bangor
411 Union St., Bangor
Millinocket

JUNIOR MEMBER

Strout, Warren G.,

489 State St., Bangor

AFFILIATE MEMBERS

Knowlton, Henry C.,
Smith, LeRoy S.,

194 French St., Bangor
Winterport

SENIOR MEMBERS

Devan, Thomas A.,
Hedin, Carl J.,

10245-47th Ave., Corona, L. 1, N. Y.
Penobscot Terrace, Brewer

HONORARY MEMBERS

Lethiecq, J. Albert,
Maddan, Martin C.,
Mansfield, Blanche M.,
Mason, Luther S.,
Purinton, Watson S.,
Small, Amos E.,
Thompson, John B.,
Weymouth, Frank D.,

115 Wilson St., Brewer
165 Center St., Old Town
297-14th St., Bangor
109 State St., Bangor
15 Ohio St., Bangor
31 Central St., Bangor
9 Central St., Bangor
46 North Main St., Brewer

MILITARY SERVICE

Clough, Herbert T., Jr.,
Damazo, Frank S.,
Shubert, William M.,

101st Med. Grp., Dow A.F.B., Bangor
Corinna
127 Leighton St., Bangor

PISCATAQUIS COUNTY

President—Linus J. Stitham, M. D.
Secretary-Treasurer—George C. Howard, M. D.

ACTIVE MEMBERS

Bradbury, Francis W.,	Dover-Foxcroft
Bundy, Harvey C.,	Milo
Carde, Albert M.,	33 Elm St., Milo
Curtis, John B.,	10 High St., Milo
Howard, George C.,	Guilford
Nickerson, Norman H.,	Greenville
Stanhope, Charles N.,	Dover-Foxcroft
Stitham, Linus J.,	50 Main St., Dover-Foxcroft
Stuart, Ralph C.,	Guilford

SENIOR MEMBERS

MacDougal, Wilbur E.,	Dover-Foxcroft
Pritham, Fred J.,	Greenville Junction

HONORARY MEMBER

Crosby, Nathaniel H.,	Milo
-----------------------	------

SOMERSET COUNTY

President—Harland G. Turner, M. D.
Secretary-Treasurer—H. Carl Amrein, M. D.

ACTIVE MEMBERS

Amrein, H. Carl,	29 Weston Ave., Madison
Ball, Franklin P.,	Bingham
Bernard, Albert J.,	198 Madison Ave., Skowhegan
Briggs, Paul R.,	Hartland
Friend, John W.,	North Anson
Greenlaw, William A.,	129 Main St., Fairfield
Grow, William B.,	Central Maine San., Fairfield
Humphreys, Ernest D.,	91 Main St., Pittsfield
Hutchins, Eugene L.,	North New Portland
Laney, Richard P.,	50 Water St., Skowhegan
Lord, Edwin M.,	198 Madison Ave., Skowhegan
Lord, Maurice E.,	220 Water St., Skowhegan
Norris, Lester F.,	36 Maple St., Madison
Philbrick, Maurice S.,	292 Water St., Skowhegan
Reed, Howard L.,	235 Madison Ave., Skowhegan
Smith, Henry F.,	Jackman Station
Strickland, Marion S.,	Canaan
Sullivan, George E.,	Bingham
Turner, Harland G.,	R. F. D. 2, Norridgewock
Young, George E.,	159 Water St., Skowhegan

SENIOR MEMBER

Marston, Henry E.,	North Anson
--------------------	-------------

HONORARY MEMBER

Stinchfield, Walter S.,	Court St., Skowhegan
-------------------------	----------------------

MILITARY SERVICE

Jordon, Walter E., Jr.,	1513 Sheffield Lane, Philadelphia, Pa.
-------------------------	----------------------------------------

WALDO COUNTY

President—Ernest W. Stein, M. D.
Secretary-Treasurer—Raymond L. Torrey, M. D.

ACTIVE MEMBERS

Holmes, George W.,	Little River Hill, Belfast
Read, Seth H.,	15 Church St., Belfast
Small, Foster C.,	169 High St., Belfast
Stein, Abraham O.,	132 Main St., Belfast
Stein, Ernest W.,	59 Main St., Pittsfield
Stevens, Carl H.,	18 Franklin St., Belfast
Temple, George L.,	5 High St., Belfast
Torrey, Raymond L.,	East Main St., Searsport

HONORARY MEMBERS

Stevens, Eugene L.,	38 Church St., Belfast
Tapley, Eugene D.,	17 High St., Belfast

WASHINGTON COUNTY

President—DaCosta F. Bennett, M. D.
Secretary-Treasurer—Karl V. Larson, M. D.

ACTIVE MEMBERS

Armstrong, Charles M.,	Robbinston
Bates, James C.,	Eastport
Bennett, DaCosta F.,	4 Main St., Lubec
Brownrigg, Leslie W.,	St. Stephen, N. B.
Capron, Charles W., Jr.,	48 Washington St., Eastport
Jacob, Donald R.,	Princeton
Kazutow, John,	Machias
Kiel, Joseph B.,	Columbia Falls
Larson, Karl V.,	East Machias
MacBride, Robert G.,	P. O. Box 146, Lubec
Metcalf, John T.,	Calais
Mitchell, Hazen C.,	Calais
Mundie, Perley J.,	Calais
Sears, Harold G.,	Woodland
Webber, Samuel R.,	Calais
Young, H. John,	Jonesport

SENIOR MEMBERS

Crane, James W.,	Woodland
Larson, Oscar F.,	Machias

HONORARY MEMBER

Gilbert, Walter J.,	Calais
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YORK COUNTY

President—Kenneth J. Cuneo, M. D.
Secretary-Treasurer—Charles W. Kinghorn, M. D.

ACTIVE MEMBERS

Bacon, Melvin,	206 Main St., Sanford
Bancroft, George R., Jr.,	Kennebunkport
Barden, Frank W.,	Saco-Lowell Shops, Biddeford
Belmont, Ralph S.,	Sanford Trust Co. Bldg., Sanford
Bunker, Willard H.,	York Harbor
Charest, Leandre R.,	260 Main St., Biddeford
Cobb, Stephen A.,	28 Winter St., Sanford
Cuneo, Kenneth J.,	31 Summer St., Kennebunk
Dennett, Carl G.,	Saco
Dionne, William E.,	21 Main St., Springvale
Downing, J. Robert,	37 Storer St., Kennebunk
Drummond, S. Dunton,	Buxton
Eppinger, Ernest,	West Buxton
Fortier, Andre P.,	260 Main St., Biddeford
Haas, Carl M.,	31 Adams St., Biddeford
Hill, Paul S., Jr.,	176 Main St., Saco
Holland, Edward W.,	28 Winter St., Sanford
Houle, Marcel P.,	13 Bacon St., Biddeford
Kinghorn, Charles W.,	4 Wentworth St., Kittery
LaFond, Robert S.,	258 Main St., Saco
Lengyel, Charles,	26 South St., Biddeford
Lesieur, Louis C.,	66 Beach St., Saco
Lincoourt, Armand S.,	47 Allen St., Sanford
Macdonald, James H.,	103 Main St., Kennebunk
Magosi, Alexander W.,	York Village
Mahaney, William F.,	338 Main St., Saco
Mazzacane, Walter D.,	Old Orchard
Moulton, Marion A. K.,	West Newfield
Murphy, John J.,	South Berwick
Myer, John C.,	2 School St., Sanford
Nemon, Leon,	243 State St., Portland
O'Sullivan, William B.,	331 Main St., Saco
Patane, Joseph M.,	Old Orchard Beach
Perrault, Oscar W.,	30 South St., Biddeford
Richards, Carl E.,	28 Winter St., Sanford
Ross, H. Danforth,	28 Winter St., Sanford
Ross, Maurice,	273 Main St., Saco
Roussin, William T.,	48 Bacon St., Biddeford
Smith, Gerald R.,	Ogunquit
Stewart, Robert B.,	Cornish
Taylor, Paul E.,	9 Wentworth St., Kittery
Tower, Elmer M.,	Ogunquit
Vachon, Robert D.,	28 Winter St., Sanford
Webber, Edward P.,	York Harbor
Xaphes, Chrysaphes J.,	154 Graham St., Biddeford

SENIOR MEMBERS

LaRochelle, Joseph R., 42 Bacon St., Biddeford
 Stickney, Laura B., Saco
 Whitney, Ray L., Cape Porpoise
 Wiley, Arthur G., Bar Mills

HONORARY MEMBERS

Davis, Ansel S., Springvale

Head, Owen B., 6 Washington St., Sanford
 Kendall, Clarence F., 68 Birch St., Biddeford
 (Winter address: 1819 Hillcrest Drive, Daytona Beach,
 Florida)
 Shapleigh, Edward E., Kittery
 Small, Fitz E., R. F. D. 2, Fortune's Rock, Biddeford
 Stimpson, Arthur J., Kennebunk

An Alphabetical List of the Members of the Maine Medical Association*

*The figures in parentheses refer to County Societies as follows: (1) Androscoggin, (2) Aroostook, (3) Cumberland, (4) Franklin, (5) Hancock, (6) Kennebec, (7) Knox, (8) Lincoln-Sagadahoc, (9) Oxford, (10) Penobscot, (11) Piscataquis, (12) Somerset, (13) Waldo, (14) Washington, (15) York.

A

Abbott, Henry W., 116 Main St., Waterville (6)
 Adams, Asa C., Main St., Orono (10)
 Adams, Lester, Western Maine San., Greenwood Mt. (9)
 Adams, Winford C., 66 Washington St., Brewer (10)
 Agan, Robert W., 22 Arsenal St., Portland (3)
 Albert, Armand, 193 Main St., Van Buren (2)
 Albert, Joseph L., Fort Kent (2)
 Albert, Louis N., Van Buren (2)
 Albrow, Ward A., 47 Broadway, Bangor (10)
 Allen, Robert L., 37 Spring St., Rockland (7)
 Ames, Forrest B., 255 Hammond St., Bangor (10)
 Amrein, H. Carl, 29 Weston Ave., Madison (12)
 Anderson, Donald L., 54 Pine St., Lewiston (1)
 Ansell, Harvey B., 38 Deering St., Portland (3)
 Apollonio, Howard L., 7 Talbot Ave., Rockland (7)
 Applin, Hilton H., 129 Maine St., Brunswick (3)
 Aranson, Albert, 73 Deering St., Portland (3)
 Archambault, Philip L., 75 Mill St., Auburn (1)
 Armstrong, Charles M., Robbinston (14)
 Asali, Louis A., 29 Deering St., Portland (3)
 Ascher, David S., Patten (2)
 Asherman, Edward G., 31 Deering St., Portland (3)
 Aucoin, Pierre B., 77 Rumford Ave., Rumford (9)
 Aungst, Melvin R., Eagle Lake (2)

B

Babalian, Leon, 38 Deering St., Portland (3)
 Babcock, Harold S., Castine (5)
 Bachrach, Louis, 20 Lincoln St., Brunswick (3)
 Bacon, Melvin, 206 Main St., Sanford (15)
 Ball, Franklin P., Bingham (12)
 Bancroft, George R., Jr., Kennebunkport (15)
 Barden, Frank W., Saco-Lowell Shops, Biddeford (15)
 Barker, Nathaniel B. T., Yarmouth (3)
 Barnes, Herbert F., State Hosp., Bangor (10)
 Barrett, Robert J., Jr., 209 State St., Bangor (10)
 Barrows, Harris C., 5 Oak St., Boothbay Harbor (8)
 Bates, James C., Eastport (14)
 Bauman, Clair S., 177 Main St., Waterville (6)
 Beach, S. Judd, 704 Congress St., Portland (3)
 Bearor, Robert H., 13 John St., Madison (7)
 Beck, Henry W., Gray (3)
 Beeaker, Vincent H., 85 Wood St., Lewiston (1)
 Beckerman, Stanley C., Waterville (6)
 Beliveau, Bertrand A., 56 Howe St., Lewiston (1)
 Beliveau, Romeo A., 89 Pine St., Lewiston (1)
 Belknap, Robert W., Damariscotta (8)
 Belknap, Samuel L., Damariscotta (8)
 Belmont, Ralph S., Sanford Trust Co. Bldg., Sanford (15)
 Bennett, DaCosta F., 4 Main St., Lubec (14)
 Bergmann, Jerome W., 131 State St., Portland (3)
 Bernard, Albert J., 198 Madison Ave., Skowhegan (12)
 Bernard, Romeo A., 26 Beacon St., Lewiston (1)
 Berrie, Lloyd H., 2 Main St., Caribou (2)
 Bettie, Ronald A., Brunswick (3)
 Bickmore, Harold V., 723 Congress St., Portland (3)

Bidwell, Robinson L., 203 State St., Portland (3)
 Bischoffberger, John M., Naples (3)
 Bishop, Lloyd W., 211 Vaughan St., Portland (3)
 Bisson, Napoleon, 29 Common St., Waterville (6)
 Blaisdell, Carl E., 42 Broadway, Bangor (10)
 Blaisdell, Elton R., 12 Deering St., Portland (3)
 Blaisdell, William B., 205 French St., Bangor (10)
 Bliss, Harry A., 58 Deering St., Portland (3)
 Bliss, Raymond V. N., Blue Hill (5)
 Bluhm, Samuel, St. Mary's Hosp., Lewiston (1)
 Boone, Storer W., 194 Main St., Presque Isle (2)
 Bourassa, Harvey J., 50 Main St., Waterville (6)
 Bousfield, Cyril E., Woolwich (8)
 Bousquet, Jean J., 91 Bartlett St., Lewiston (1)
 Boynton, Willard H., Bethel (9)
 Bradbury, Francis W., Dover-Foxcroft (11)
 Bradford, William H., 133 Coyle St., Portland (3)
 Bramhall, Theodore C., 49 Deering St., Portland (3)
 Branch, Charles F., 69 Gamage St., Auburn (1)
 Brann, Henry A., 31 Western Ave., Augusta (6)
 Branson, Sidney R., 37 Main St., South Windham (3)
 Beard, J. Alfred, 15 Summer St., Waterville (6)
 Bridges, Donald E., 263 State St., Bangor (10)
 Briggs, Paul R., Hartland (12)
 Brien, Maurice, 76 Pine St., Lewiston (1)
 Brinkman, Harry, 47 Perham St., Farmington (4)
 Brock, Henry H., Alfred (3)
 Broggi, Frank S., 18 Neal St., Portland (3)
 Broughton, David S., 18 Hartford Ave., Rumford (9)
 Brown, Donald H., 13 Maple St., Rockland (7)
 Brown, Elmer J., 81 Main St., Farmington (4)
 Brown, Eugene E., 276 State St., Bangor (10)
 Brown, Freeman F., 5 Beech St., Rockland (7)
 Brown, Freeman F., Jr., 446 Hartford Ave., Wethersfield, Conn. (7)
 Brown, Lloyd, 316 State St., Bangor (10)
 Brown, Luther A., 13 Deering St., Portland (3)
 Brownrigg, Leslie W., St. Stephen, N. B. (14)
 Buker, Edson B., 80 Goff St., Auburn (1)
 Bull, Frank B., 72 Church St., Gardiner (6)
 Bundy, Harvey C., Milo (11)
 Bunker, Willard H., York Harbor (15)
 Burbank, Bernard H., 275 Cottage Rd., South Portland (3)
 Burke, Paul W., 5 High St., Newport (10)
 Burns, Robert M., 810 Main St., Westbrook (3)
 Burr, Charles G., Houlton (2)
 Burrage, William C., 57 Deering St., Portland (3)
 Busch, John J., 105 Elm St., Mechanic Falls (1)
 Butler, Harry, 77 Broadway, Bangor (10)
 Butterfield, Wilfred I., 119 Main St., Lincoln (10)

C

Campbell, Fred G., Warren (7)
 Capron, Charles W., Jr., 48 Washington St., Eastport (14)
 Carde, Albert M., 33 Elm St., Milo (11)
 Carmichael, Frank E., 72 Deering St., Portland (3)
 Caron, Frederic J., 174 Bates St., Lewiston (1)
 Carter, Loren F., Northern Maine San., Presque Isle (2)
 Cartland, John E., 117 Goff St., Auburn (1)

Casey, William L., 131 State St., Portland (3)
 Cates, Samuel C., East Vassalboro (6)
 Cattley, Amy L., 477 Main St., Lewiston (1)
 Center, Ervin A., Steep Falls (3)
 Champlin, Frederic B., 216 Main St., Waterville (6)
 Chapin, Milan A., 237 Turner St., Auburn (1)
 Charest, Leandre R., 260 Main St., Biddeford (15)
 Chase, Philip B., Anson St., Farmington (4)
 Chasse, Richard L., 173 Main St., Waterville (6)
 Chenery, Frederick L., Jr., Monmouth (1)
 Chevalier, Paul R., 355 Pine St., Lewiston (1)
 Christensen, Harry E., 672 Ocean Ave., Portland (3)
 Clapp, Waldo A., 215 College St., Lewiston (1)
 Clapperton, Gilbert, 300 Main St., Lewiston (1)
 Clarke, Chester L., 10 Congress Sq., Portland (3)
 Clarkin, Charles P., 131 State St., Portland (3)
 Clough, Dexter J., 2nd, 224 State St., Bangor (10)
 Clough, Herbert T., Jr., D. A. F. Base, Bangor (10)
 Cobb, Stephen A., 28 Winter St., Sanford (15)
 Coffin, Ernest L., Northeast Harbor (5)
 Coffin, Silas A., 39 High St., Bar Harbor (5)
 Colby, Edward W., 389 Congress St., Portland (3)
 Colley, Maynard B., Wilton (4)
 Conneen, Lawrence W., 131 State St., Portland (3)
 Cook, Aaron, Waterville (6)
 Cook, Edward M., Jr., 4966 West Point, Loma Blvd., San Diego, Cal. (3)
 Cordray, David P., 31 Western Ave., Augusta (6)
 Cornell, Robert C., Orono (10)
 Coulton, Donald, 326 State St., Bangor (10)
 Cox, William V., 133 Court St., Auburn (1)
 Cragin, Charles L., 831 Congress St., Portland (3)
 Crane, James W., Woodland (14)
 Crane, Lawrence, 265 Western Promenade, Portland (3)
 Crowe, James H., 121 Main St., Ellsworth (5)
 Crosby, Nathaniel H., Milo (11)
 Cummings, George O., 47 Deering St., Portland (3)
 Cummings, George O., Jr., 47 Deering St., Portland (3)
 Cuneo, Kenneth J., 31 Summer St., Kennebunk (15)
 Curran, Edward D., 159 State St., Bangor (10)
 Curtis, Harry L., 142 High St., Portland (3)
 Curtis, John B., 10 High St., Milo (11)
 Cutler, Lawrence M., 31 Grove St., Bangor (10)

D

Dachslager, Philip, 21 Western Ave., Augusta (6)
 Dalrymple, Sidney C., 239 Walnut St., Brookline, Mass. (8)
 Damazo, Frank S., Corinna (10)
 Damon, Albert H., Limestone (2)
 Daniels, Donald H., 73 Deering St., Portland (3)
 Darche, Albert A., 782 Main St., Westbrook (3)
 Dash, George E., Boothbay Harbor (8)
 Davidson, David, 45 Deering St., Portland (3)
 Davidson, Gisela K., 45 Deering St., Portland (3)
 Davies, Lloyd G., Fryeburg (3)
 Davis, Ansel S., Springvale (15)
 Davis, Harry E., 169 State St., Portland (3)
 Day, DeForest S., Wiscasset (8)
 DeFoe, Garfield G., Dixfield (9)
 Dennett, Carl G., Saco (15)
 Dennis, Richard H., 33 College Ave., Waterville (6)
 Dennison, Frederick C., Main St., Thomaston (7)
 Desaulniers, George E. D., 106 Chestnut St., Lewiston (1)
 Derry, G. Hermann, Jr., 690 Congress St., Portland (3)
 Desjardins, A. W., So. Bristol (8)
 Devan, Thomas A., 10245—47th Ave., Corona, L. I., N. Y. (10)
 Dietrich, Mary M., R. R. 3, South Brewer (10)
 Dionne, Maurice J., 36 Cumberland St., Brunswick (3)
 Dionne, William E., 21 Main St., Springvale (15)
 Dixon, Walter G., 16 Deering St., Norway (9)
 Doble, Eugene H., Presque Isle (2)
 Donahue, Clement L., 22 Main St., Caribou (2)
 Donahue, Gerald H., 5 Station St., Presque Isle (2)
 Donovan, Joseph A., Houlton (2)
 Dooley, Francis M., 53 Deering St., Portland (3)
 Dore, Clarence E., 65 Temple St., Waterville (6)
 Dore, Kenneth E., Fryeburg (3)
 Dorsey, F. Donald, 52 Deering St., Portland (3)

Dougherty, John F., 112 Front St., Bath (8)
 Douchinett, Otis J., 763 Congress St., Portland (3)
 Downing, J. Robert, 37 Storer St., Kennebunk (15)
 Drake, Emerson H., 29 Deering St., Portland (3)
 Drake, Eugene H., 58 Deering St., Portland (3)
 Drummond, S. Dunton, Buxton (15)
 Duffey, Richard V., 255 N. Main St., Brewer (10)
 Duffy, Wallace H., 100 Main St., Farmington (4)
 DuMais, Alcid F., 125 College St., Lewiston (1)
 Dunham, Carl E., 201 State St., Portland (3)
 Dunham, Rand A., East Millinocket (10)
 Dunn, Robert H., Veterans' Adm., Togus (6)
 Dwyer, Clement S., 205 French St., Bangor (10)
 Dyhrberg, Norman E., 331 Main St., Cumberland Mills (3)

E

Earle, Ralph P., Vinalhaven (7)
 Earnhardt, Joseph B., 55 Stroudwater St., Westbrook (3)
 Eastman, Charles W., Livermore Falls (4)
 Ebbett, Penry L. B., Houlton (2)
 Elkins, Harry, State Hosp., Augusta (6)
 Elsemore, Dexter E., Dixfield (9)
 Emanuel, Meyer, Veterans' Adm., Togus (6)
 Emerson, W. Merritt, 131 State St., Bangor (10)
 Emery, Clarence, Jr., 92 Essex St., Bangor (10)
 Emery, Frederick C., 3 Third St., Bangor (10)
 Eppinger, Ernest, West Buxton (15)
 Ervin, Edmund N., 33 College Ave., Waterville (6)

F

Fagone, Francis A., 312 Congress St., Portland (3)
 Fahey, William J., 17 Frye St., Lewiston (1)
 Fallon, Richard, 43 Green St., Augusta (6)
 Faucher, Francois J., Grand Isle (2)
 Fay, Thomas F., 284 Water St., Augusta (6)
 Feeley, J. Robert, 316 State St., Bangor (10)
 Fellows, Albert W., 52 Ohio St., Bangor (10)
 Ferguson, Franklin A., 9 Deering St., Portland (3)
 Ferguson, Franklin F., 22 Arsenal St., Portland (3)
 Fichtner, Paul, Rangeley (4)
 Finks, Henry B., 73 Deering St., Portland (3)
 Fish, Nicholas, 38 Deering St., Portland (3)
 Fisher, Dean, State House, Augusta (6)
 Fisher, Samson, 177 Main St., Waterville (6)
 Flanders, Merton N., 370 Main St., Lewiston (1)
 Floyd, Albion E., New Sharon (4)
 Floyd, Paul E., 2 Middle St., Farmington (4)
 Fogg, C. Eugene, 35 Deering St., Portland (3)
 Foote, Edward L., Veterans' Adm., Togus (6)
 Fortier, Andre P., 260 Main St., Biddeford (15)
 Foster, Albert D., Bay Shore Drive, Falmouth Foreside (3)
 Foster, Thomas A., 131 State St., Portland (3)
 Fox, Francis H., 83 West St., Portland (3)
 Fox, S. Frank, 173 State St., Portland (3)
 Freeman, William E., 107 Main St., Yarmouth (3)
 Friend, John W., North Anson (12)
 Frost, Robert A., 108 Summer St., Auburn (1)

G

Gagnon, Bernard H., Houlton (2)
 Gauvreau, Horace L., 82 Pine St., Lewiston (1)
 Gauvreau, Norman O., 78 Pine St., Lewiston (1)
 Geer, Charles R., 690 Congress St., Portland (3)
 Geer, George I., Jr., 690 Congress St., Portland (3)
 Gehring, Edwin W., 284 Ocean Ave., Portland (3)
 Getchell, Ralph A., 690 Congress St., Portland (3)
 Geyerhahn, George, 43 Deering St., Portland (3)
 Giddings, Paul D., 31 Western Ave., Augusta (6)
 Giesen, Joseph H., 35 College Ave., Waterville (6)
 Giguere, Eustache N., 109 Cedar St., Lewiston (1)
 Gilbert, Walter J., Calais (14)
 Gingras, Adolphe J., 99 Water St., Augusta (6)
 Gingras, Napoleon J., 105 Water St., Augusta (6)
 Glassmire, Charles R., 58 Deering St., Portland (3)
 Goduti, Richard J., 704 Congress St., Portland (3)

Goldman, Morris E., 487 Main St., Lewiston (1)
 Good, Philip G., 38 Deering St., Portland (3)
 Goodof, Irving I., Thayer Hosp., Waterville (6)
 Goodrich, Blynn O., 165 Main St., Waterville (6)
 Goodrich, John P., Boothbay Harbor (8)
 Goodwin, Ralph A., 56 Denison St., Auburn (1)
 Goodwin, Ralph A., Jr., 33 Court St., Auburn (1)
 Gordon, Charles H., 46 Deering St., Portland (3)
 Gormley, Eugene G., Houlton (2)
 Gould, Arthur L., Freeport (3)
 Gould, George I., 79 Main St., Richmond (6)
 Grant, Alton L., Jr., 133 Court St., Auburn (1)
 Graves, Robert A., Ft. Devens, Mass. (2)
 Gray, Philip L., Blue Hill (5)
 Greco, Edward A., 12 Pine St., Portland (3)
 Green, Archibald F., 60 Elm St., Camden (7)
 Green, Ross W., 33 Court St., Auburn (1)
 Greene, John A., 96 Congress St., Rumford (9)
 Greene, Merrill S. F., 466 Main St., Lewiston (1)
 Greenlaw, William A., 129 Main St., Fairfield (12)
 Gregory, Frederick L., 16 High St., Caribou (2)
 Gregory, Philip O., Boothbay Harbor (8)
 Griffiths, Eugene B., Presque Isle (2)
 Gross, Leroy C., 19 Goff St., Auburn (1)
 Grow, William B., Central Maine San., Fairfield (12)
 Guite, L. Armand, 27 Main St., Waterville (6)

H

Haas, Carl M., 31 Adams St., Biddeford (15)
 Haas, Rudolph, 488 Main St., Lewiston (1)
 Hall, Walter D., 407 Main St., Rockland (7)
 Hall, Walter L. H., 50 North 4th St., Old Town (10)
 Hallett, George W., 131 State St., Portland (3)
 Hamel, John R., 50 Deering St., Portland (3)
 Hamilton, Virginia C., 900 Washington St., Bath (8)
 Hanley, Daniel F., Brunswick (3)
 Hanlon, Francis W., 46 Deering St., Portland (3)
 Hanson, Henry W., Jr., Cumberland Center (3)
 Hanson, Joseph H., 272 Arcadia St., Toledo, Ohio (5)
 Harkins, Michael J., 437 Main St., Lewiston (1)
 Harlow, Edwin W., 177 Main St., Waterville (6)
 Harvey, Thomas G., 164 Main St., Fort Fairfield (2)
 Haskell, Alfred W., 142 High St., Portland (3)
 Haskell, Harris B., 9 Bramhall St., Portland (3)
 Hawkes, Richard S., 47 Deering St., Portland (3)
 Hawkins, Donald B., R. F. D. 1, Camden (8)
 Hayden, Louis B., Livermore Falls (1)
 Head, Owen B., 6 Washington St., Sanford (15)
 Hedin, Carl J., Penobscot Terrace, Brewer (10)
 Heifetz, Ralph A., 173 State St., Portland (3)
 Herrick, Stanley E., 12 Deering St., Portland (3)
 Herring, Leon D., Winthrop (6)
 Higgins, Everett C., 149 College St., Lewiston (1)
 Higgins, George I., Newport (10)
 Hill, Allison K., 113 Somerset St., Bangor (10)
 Hill, Frederick T., 177 Main St., Waterville (6)
 Hill, Howard F., 33 College Ave., Waterville (6)
 Hill, Paul S., Jr., 176 Main St., Saco (15)
 Hills, Louis L., 816 Main St., Westbrook (3)
 Hinckley, Harry F., Jr., 23 Chapel St., Augusta (7)
 Hirschberger, Celia, 44 Main St., Waterville (6)
 Hirshler, Max, 85 Pine St., Lewiston (1)
 Hogan, Chester F., Houlton (2)
 Holland, Edward W., 28 Winter St., Sanford (15)
 Holmes, George W., Little River Hill, Belfast (13)
 Holt, C. Lawrence, 29 Deering St., Portland (3)
 Holt, Hiram A., Winter Harbor (5)
 Holt, William, 14 Deering St., Portland (3)
 Horton, George H., 247 Hammond St., Bangor (10)
 Houle, Marcel P., 13 Bacon St., Biddeford (15)
 Houlihan, John S., 209 State St., Bangor (10)
 Howard, George C., Guilford (11)
 Howard, Harvey, Freeport (3)
 Howard, Henry M., 105 Franklin St., Rumford (9)
 Hubbard, Roswell E., Waterford (9)
 Hudson, Henry A., Bridgton (3)
 Huggard, Leslie H., Limestone (2)

Humphreys, Ernest D., 91 Main St., Pittsfield (12)
 Huntress, Roderick L., 10 Congress Sq., Portland (3)
 Hurd, Allan C., 72 Church St., Gardiner (6)
 Hutchins, Eugene L., North New Portland (12)

I

Irwin, Carl W., 316 State St., Bangor (10)
 Ives, Howard R., Jr., 31 Deering St., Portland (3)

J

Jackson, Elmer H., Depositors Trust Bldg., Augusta (6)
 Jacob, Donald R., Princeton (14)
 Jacobson, Payson B., 59 Deering St., Portland (3)
 James, Chakmakis, 47 Howe St., Lewiston (1)
 James, John A., 112 Summer St., Auburn (1)
 Jameson, C. Harold, 463 Main St., Rockland (7)
 Jamieson, James G. S., 82 High St., Portland (3)
 Johnson, Albert C., 45 Deering St., Portland (3)
 Johnson, Gordon N., Houlton (2)
 Johnson, Henry P., 32 Deering St., Portland (3)
 Johnson, Oscar R., 18 Deering St., Portland (3)
 Jones, Paul A., Union (7)
 Joost, Arthur M., Jr., Bucksport (5)
 Jordon, Walter E., Jr., 1513 Sheffield Lane, Philadelphia, Pa.

K

Kagan, Samuel H., 283 Water St., Augusta (6)
 Kay, Edwin, 31 Frye St., Lewiston (9)
 Kazutow, John, Machias (14)
 Kellogg, Robert O., 316 State St., Bangor (10)
 Kendall, Clarence F., 68 Birch St., Biddeford (15)
 Kennedy, Roy H., Washburn (2)
 Kershner, Warren E., 119 Front St., Bath (8)
 Kibbe, Frank W., 37 Spring St., Rockland (7)
 Kiel, Joseph B., Columbia Falls (14)
 Kimball, Herrick C., Fort Fairfield (2)
 Kinghorn, Charles W., 4 Wentworth St., Kittery (15)
 Kirk, William V., Eagle Lake (2)
 Knickerbocker, Charles H., 106 East Marshall St., Falls Church, Virginia
 Knowlton, Charles C., Ellsworth (5)
 Knowlton, Henry C., 194 French St., Bangor (10)
 Kopfmann, Harry, Deer Isle (5)
 Kupelian, Nessib S., State School, Pownal (3)

L

Labbe, Onil B., Van Buren (2)
 LaFond, Robert S., 258 Main St., Saco (15)
 Lamb, Henry W., 77 Ocean Ave., Portland (3)
 Lambert, Greenlief H., 112 South Dianthus St., Manhattan Beach, Calif. (6)
 Laney, Richard P., 50 Water St., Skowhegan (12)
 Langer, Ella, State House, Augusta (6)
 LaPorte, Paul C., Edmundston, N. B. (2)
 Lape, C. Philip, 49 Deering St., Portland (3)
 Lappin, John J., 171 State St., Portland (3)
 LaRochelle, Joseph R., 42 Bacon St., Biddeford (15)
 Larrabee, Charles F., Bar Harbor (5)
 Larson, Karl V., East Machias (14)
 Larson, Oscar F., Machias (14)
 Laughlin, K. Alexander, 201 State St., Portland (3)
 Lawry, Oram R., Jr., 96 Limerock St., Rockland (7)
 Leach, Charles H., Tenant's Harbor (7)
 Leary, Gerald C., 144 State St., Portland (3)
 Leighton, Adam P., 192 State St., Portland (3)
 Leighton, Wilbur F., 192 State St., Portland (3)
 Lemaitre, Paul G., 268 Webster St., Lewiston (1)
 Lennest, Stanley R., Waldoboro (8)
 Lengyel, Charles, 26 South St., Biddeford (15)
 Lepore, Anthony E., 72 Church St., Gardiner (6)
 Lesieur, Louis C., 66 Beach St., Saco (15)
 Lethiecq, J. Albert, 115 Wilson St., Brewer (10)
 Levesque, Romeo J., Frenchville (2)
 Lezberg, Joseph, 116 State St., Bangor (10)

Libby, Harold E., 310 Main St., Westbrook (3)
 Liebermann, Arthur R., 209 State St., Bangor (10)
 Lincoln, John R., 22 Arsenal St., Portland (3)
 Lincourt, Armand L., 47 Allen St., Sanford (15)
 Loewenstein, George, Great Chebeague Island (3)
 Logan, G. E. C., 144 State St., Portland (3)
 Lombard, Reginald T., 793 Main St., South Portland (3)
 Lord, Edwin M., 198 Madison Ave., Skowhegan (12)
 Lord, Maurice E., 220 Water St., Skowhegan (12)
 Lorimer, Robert V., 150 State St., Portland (3)
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 Lovely, David K., 73 Deering St., Portland (3)
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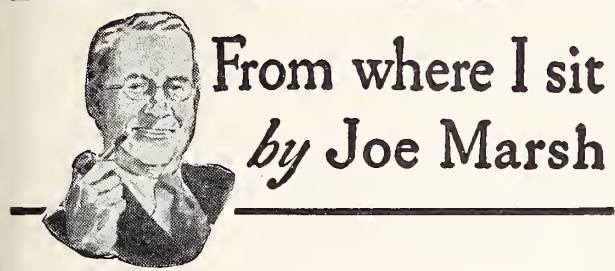
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Well, What Do You Know?

Do you believe in a bunch of old tales about lightning—about how it’s attracted by cats or the warmth of cattle . . . how it never strikes in the same place twice . . . or how it’s liable to turn milk sour? Lots of people often do—but they’re wrong.

‘Dad Hawkins inspired this column for me today. He’s really studied up on lightning since his own cow barn was struck that time.

“Trouble is, most of us don’t know half enough about the subject,” Dad says. “And about half of what we do know about lightning is false!”

From where I sit, Dad’s statement applies to a lot of things besides lightning. Too many people think they know what’s best for the other fellow. Like those who would tell a man how to practice his profession . . . or those who resent our right to enjoy a friendly glass of beer if and when we choose. Opinions based on misinformation and prejudice, instead of being “grounded” on true facts can cause more damage than lightning ever did.

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That was a very sensible thing to do. After all, it may be the lady's duty to manage affairs someday, and it's well to learn about them *now*. But after all, what she can be planning and providing for is a time of retirement,—to enjoy peace and comfort together in old age, perhaps some travel—and the *resources* to carry these things to realization.

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The Journal of the Maine Medical Association

Volume Forty-Three

Portland, Maine, July, 1952

No. 7

PRESIDENT'S ADDRESS*

A Two Million Dollar Project

C. HAROLD JAMESON, M. D., Rockland, Maine**

Formal medical education in the State of Maine came to an end with the closure of the Maine Medical School in 1921. The important contribution of that institution to medical education not only in this state but in New England and the country at large is well recognized. Even in this year 1952 there are one hundred seventy-two living alumni of the Bowdoin Medical School. Sporadic interest in the re-establishment of a medical school in Maine has developed and found earnest sponsors among members of this association and in the person of influential educators and laymen. Presently that interest is slumbering not yet awakened into firm conviction of the need. That the interest is only dormant is to be hoped for the need may become apparent when a careful survey of the overall picture is obtained. For the country at large it has been announced that this year 1952 "at least ten states have taken steps to build new medical schools or to expand their two-year basic science schools into four-year institutions with estimated expenditure of at least fifty million dollars."***

Be that as it may at this time and in the foreseeable future the youth of this state must seek opportunities for medical education among the seventy-nine four-year schools dispersed over the country, and they

must be well prepared in pre-medical subjects to compete with the type of youth whose ambition has impelled them also to enter with firm determination upon this high profession.

In the four Maine Colleges during the academic year 1951-52 there were 21 Maine resident students enrolled in pre-medical courses. An effort by our own committee on medical education to provide a liaison with certain medical schools has resulted in the assurance of favorable consideration of adequately prepared individuals desirous of launching upon a medical career. For the present not much more can be accomplished by this association other than to consider the establishment of financial aids in the way of scholarships or tuition payments for worthy students, a move deserving of our studied attention. As one thinks of the plight of our own youth desiring medical education, however, one must give heed to medical education in the nation at large with nearly four-score schools bent on providing high grade instruction in this all important field. And then one may become aware of the beckoning finger of these very schools which stand sorely in need of financial assistance in order to carry on with efficiency in a period of continually rising costs and inadequate returns from endowments. Even today as the State of Massachusetts contemplates creating a new institution for teaching medicine and dentistry, one reads the governor's statement that the cost per

* Presented at the 99th Annual Session of the Maine Medical Association, June, 1952.

** President, Maine Medical Association, 1951-1952.

*** (Secretaries' letter No. 211, March 10, 1952.)

student per year is \$2,300, the average figure for the private school; and if this estimate be correct it is very likely lower than the comparative cost in the state or municipal managed school.

The foregoing remarks will serve as a preamble to the underlying purpose of this paper which is dedicated to the subject of medical education in the nation as a whole with particular reference to the demonstrated need for financial assistance. The future pattern of medical education becomes involved affecting our own profession intimately and eventually the level of medical care throughout the country. In order to present the picture comprehensively it is essential to review certain events of the past few years and to draw freely from the reports of the American Medical Education Foundation recorded by its Secretary-Treasurer Donald G. Anderson, M. D.

Following World War II growing deficits confronted the medical schools of this country. In 1948 the sharpening problem came to the attention of the Congress on Medical Education and Licensure in Chicago. President Alan Valentine of the University of Rochester emphasized the seriousness of the matter and initiated the suggestion of raising money by small gifts solicited on a nation-wide basis. Later on in July a committee was formed under the Chairmanship of Mr. Earl Bunting, Managing Director of the National Association of Manufacturers to "explore specific ways by which such a campaign could be developed through the coöperative efforts of the medical profession, the medical schools, business and industry."

In the fall of the same year a group of university presidents under the leadership of James B. Conant and Dwight Eisenhower began an independent study of medical school deficits. The two groups naturally combined their efforts which resulted in the origin of the National Fund for Medical Education with a group of distinguished leaders of American life as trustees. Formal incorporation of the Fund was completed in 1949. Underwriting the initial expenses of the Fund was the American Medical Association and certain philanthropic organizations.

To provide an auspicious start for the campaign and generate favorable publicity the Trustees of the American Medical Association in December, 1950, voted \$500,000. The establishment of the American Medical Education Foundation followed shortly in the wake of this generous contribution. The function of the Fund was to be solicitation of funds from industry, agriculture, labor, philanthropic organizations and laymen while that of the Foundation was to win the coöperation of the medical profession at large. Furthermore the Foundation was designed to undertake the *collection* of funds while the National Fund would be responsible for *distribution* of grants to the schools.

The character of grants was settled upon by the Trustees of the National Fund as recommended by the Advisory Council, which included three members from the Foundation's directors. Three types of grants were designated: Class "A" grants to be a uniform annual sum given to every approved medical school in the United States; Class "B" grants to be a uniform annual sum per student to be given to every approved school in the United States; Class "C" grants to be awarded to individual schools on the basis of special needs and problems.

Let me give you at this point some information with respect to the make-up or composition of the Trustees of the National Fund. This is a body of sixty-five to seventy outstanding citizens from all walks of public life. Mr. Herbert Hoover, Honorary Chairman is said to be far from *honorary* in the accepted sense of the word. He has been in attendance at several meetings and spoken on various occasions. The executive committee has been very active and generous in contributions of both time and energy. This group with a small active full-time staff are concentrating on obtaining the enlistment of the financial support of the nation's leading corporations. Encouraging contact has been made with contributions already secured from more than twenty of the largest corporations of the United States and from more than one-third of the fifty-four life insurance companies.

Now a word as to the success of the campaign during the initial year of its actual operation 1951, a year in which publicity was given through newspapers and publications of the American Medical Association in articles and editorials. During that year the Foundation raised a total of \$745,917.84 including the original contribution of \$500,000 from the American Medical Association. \$245,917.84 came from 1,811 individual physicians, 33 organizations and 33 lay friends of the profession. One state medical association, California, contributed \$100,000 leaving a balance of \$145,917.84 from the other sources cited. The generosity of the medical profession is unimpressive judging from the above data yet it is to be considered in the light of the program's toddling infancy and its shy beckoning toward the preoccupied physician. In this state three physicians and one layman are given credit for a total contribution of \$360.40 in 1951!

The seemingly meager showing for 1951 was no cause for distress among the Directors of the Foundation however and optimistic expectations are expressed for the current second year. Donald G. Anderson, M. D., Secretary-Treasurer of the Foundation points out an accelerated momentum in contributions noting that "in January, 1951, only seventeen contributions were received from individual physi-

cians while in January of this year 531 contributions totalling more than \$33,000 were received."

Let's hear the sarcastic reference to this campaign from the remarks of Senator James E. Murray during debate of S. 337 (Federal Aid to Medical Education) in the Senate, October 3-4, 1951. "I am glad that the AMA is urging members every week to individually contribute a hundred dollars a year to the support of our medical schools. But I am sorry to note that during the first 24 weeks of the campaign less than three one-hundredths of one percent of the country's physicians was in sufficient agreement with the AMA's position to make such an individual contribution." No, gentlemen, that figure is not an error. For over six months the AMA appealed to its members to help solve the critical needs of our medical schools the AMA way. It asked them to do so much each week during that period. On August 4, 1951, the *Journal of the AMA* listed the names of the doctors who had complied. They amounted not to fifty percent of our doctors, gentlemen; not to five percent, not to three percent; not even one percent of the physicians in this country complied. When you add up the list of those who did, you will find that it represents approximately point 003; three one-hundredths of one percent of the doctors of America agree with the AMA's leadership as to how that which the AMA itself calls "A Challenge to the Medical Profession" should be met.

It was stated above that the receipts from the Foundation for 1951 amounted to \$745,000 or a little more. The amount was essentially equalled by the contribution from the National Fund so that just over one and a half million dollars was available for distribution in grants. In accordance with their declared policy in this first distribution made in July, 1951, each of the four-year schools received a Class "A" grant of \$15,000 and a Class "B" grant of \$17.00 per student which averaged \$5,600 for each school. Another series of grants was made in January, 1952, at which time the combined balance of both Fund and Foundation from 1951 collections was distributed. These Class "B" grants ranged from \$3,077 to \$11,373. This series completed the distribution of funds collected in the initial year and was raised 56 percent by the Foundation and 44 percent by the Fund. The hope is entertained to be able to have in the future about four million dollars for annual distribution through the three classes of grants.

On February 17, 1952, representatives of forty-one state medical associations attended a meeting at Chicago under the aegis of the American Medical Education Foundation. All expenses were paid by the American Medical Association as has been the declared policy from the outset to the end that all moneys collected should find one hundred percent application to the ultimate goal of supporting medi-

cal education. The slogan of this meeting was "There is much to be done" and the immediate purpose was to bring to the state associations a closer understanding of the ends in view and to enlist coöperation through intimate contacts at state and county levels. The interest among all present was keen, the confidence of success contagious and the conviction firm of widespread coöperation among the nations two hundred and ten thousand physicians once they became aware of what was going on.

Dr. Anderson at this gathering emphasized certain major policies.

- (1) The Funds raised by the Foundation are for unrestricted use of the Medical Schools. No vestige of dictatorial influence is conveyed with the grants.
- (2) All expenses of the Foundation are met with funds supplied by the American Medical Association. Dollar for dollar the contributions to the Foundation finds its way to the support of the medical schools as the individual contributor intended.
- (3) Physicians may earmark their contributions for a particular medical school. These gifts will go in full to the indicated school in addition to the grants from unearmarked funds raised by the Foundation and the National Fund. It is requested that gifts from organizations be unearmarked since they are derived from contributors with varied allegiances.
- (4) To avoid possible competition with fund raising activities of individual medical schools, the Board of Directors of the Foundation voted "that their annual reports should include the names of those physicians contributing to the Foundation as well as those who the schools report have made a direct contribution to the Medical School."

It may be noted here that early in 1950 the Foundation obtained the desired ruling that gifts to the American Medical Education Foundation or to the National Fund were legitimate deductions in income tax declarations.

The importance of the financial assistance rendered through the grants by the Fund has found quick recognition by the schools of medicine. Unearmarked funds are inevitably welcomed eagerly. At the meeting in October, 1951, the Association of American Medical Colleges passed the following resolution:

"Resolved, that the deans of the medical schools in assembly for their sixty-second annual meeting unanimously express their sincere appreciation and enthusiastic thanks to the Directors and Officers of the American Medical Education Foundation for their substantial support of medical education

and for helping to focus national attention on the serious financial predicament of the Medical Schools."

From another angle came the expression of appreciation in December, 1951, this time the voice of the Student American Medical Association at its annual meeting:

"We extend our sincere appreciation to the American Medical Foundation for the most beneficial program they are undertaking."

Returning from the Chicago meeting, February 17th, imbued with enthusiasm to enlist the support of Maine physicians for this nation-wide movement, I presented the picture to the Council at the regular meeting on February 24th. Favorable action was unanimously taken and I was appointed to head a committee comprised of one member from each Councillor District. These members are as follows: Donald Marshall, Portland; Wallace E. Webber, Lewiston; A. W. Desjardins, South Bristol; George E. Young, Skowhegan; Edward Thegan, Bucksport; and Storer Boone, Presque Isle. These men will do

what they can to arouse the interest of physicians within their own districts. I have endeavored to bring the cause before you in short editorials in the JOURNAL, and when I could to present the subject before county society meetings. The whole subject seemed of major importance worthy of review at the annual meeting and I trust will have commanded your serious interest.

During the next few days each member of the association will receive a letter from your retiring president with a brief appeal for assistance and a blank form which will enable you to make your voluntary contribution to the American Medical Education Foundation. Token contributions will hardly suffice to aggregate the desirable increment of the two million dollar goal set for this year by the "Foundation" officers. It is unbelievable that Senator Murray's sarcastic references are indeed tenable. Once the physicians of Maine understood the financial plight of our medical schools, their firm coöperation can be expected and no doubt will be forthcoming.

THE PRESENT STATUS OF DIAGNOSIS AND TREATMENT OF CARCINOMA OF THE BLADDER

MEYER EMANUEL, M. D.*

The advent of a tumor board and the increase in the number of patients with malignancy at Togus have focused our attention more sharply upon the criteria used in deciding what treatment is to be recommended for a given patient with malignancy.

More recently on the urological service patients with neoplasms of the bladder have come before the tumor board in rather surprising frequency. It has been thought worth while and necessary to review the entire subject of tumors of the urinary bladder with particular attention to the controversial matter of treatment. Further, while the subject itself is a fearfully familiar one, the current interpretation of findings, aids in diagnosis, and details of the bolder surgery merit studied consideration.

ANATOMY

The urinary bladder is lined with transitional epithelium, has a submucosa and a muscular coat. Outside the muscle lies loose fibroelastic tissue containing considerable fat, vessels, nerves and lymphatics, which at the base blends with the pelvic fascia. Peritoneum covers chiefly the posterosuperior aspect

of the bladder. The lymphatic drainage which begins in the mucous and muscular coats ultimately flows into chains of nodes following the course of the pelvic vessels, and upward into the retroperitoneal and aortocaval nodes.

The bladder is easy to get at suprapubically and perineally, and a considerable portion of its interior can be visualized with cystoscopic instruments. This ease of approach has been a two-edged sword. It permits adequate treatment of some small, early tumors with minimal surgical disturbance on the one hand, and discourages necessary, more drastic surgical treatment on the other. On this point the urinary bladder differs from the lung, stomach, intestine, kidney or uterus. With operable malignancy in these organs there is no temporizing with half-measures. There is no easy access and surgery when done is drastic.

ETIOLOGY

As for neoplasms elsewhere in the body information is very limited. Some initiating factor is believed to give origin to these tumors. Workers with aniline dyes have shown a higher incidence of such tumors

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than the general population. Bilharziasis lesions of the bladder are often associated with tumor, and the fact that males are more prone to acquire these tumors than females has suggested influence of hormonal factors.

In this connection may be recalled the few reports of regression of the tumors after diverting the urine from the bladder by bilateral uretero-sigmoidostomy. The implication is that the carcinogenic agent whether exogenous or endogenous appears in the urine.

INCIDENCE

Bladder tumors make up about 3% of all neoplasms, about 4% of malignancy in the male, and comprise 3% of urinary affections. They occur in the male about three to four times as often as in the female. Eighty percent are in people over 65 and ninety percent in those over 50. Most patients are about 60 years of age.

CLASSIFICATION OF BLADDER TUMORS

Primary tumors of the bladder are either epithelial or of mesodermal origin. The latter, which include fibromas, myomas, angiomas, sarcomas or combinations of these are relatively infrequent. For practical purposes they are not statistically of paramount importance. It is the epithelial tumors that are a constant challenge to the urologist, and of these the vast bulk are *papillomas*, *papillary carcinomas*, and *non-papillary carcinomas*. When there has been metaplasia of the transitional epithelium in a nonpapillary tumor it is often described as *squamous cell* or *epidermoid carcinoma*. Far less frequently adenocarcinoma is encountered.

A 1950 report by Dean and Ash based upon available data in the Tumor Registry of the American Urological Association shows the following distribution of tumors :

1. Papilloma, papillary carcinoma, and squamous cell carcinoma	5182
2. Adenocarcinoma	69
3. Sarcoma	25
4. Others	5
5. Not stated	43

Bladder tumors are further classified as *infiltrating* or *noninfiltrating*. Upon this distinction depends not only treatment but the painful inquiry into prognosis. As will be seen later, it is the infiltrating tumor which has shrouded treatment of bladder tumors with pessimism. The factor of grading is less important. It is not enough, for example, to describe a tumor as a papillary carcinoma, grade 2; it is necessary to indicate whether or not it is infiltrating and how deeply. Nonpapillary carcinomas are infiltrative, and in general the deeply infiltrative tumors are the ones which metastasize.

THE PAPILLOMA

Perhaps no controversy between pathologists and clinicians is as highlighted as that over the definition of a papilloma. Is it a benign tumor or is it an insidious cancer masquerading in the guise of innocence? This lack of decisiveness stems from the chagrin of urologists who thought they were treating a "benign" papilloma only to discover shortly or long after that a papillary carcinoma was actually present. Aschner recalls the early days when removal of an apparently innocent papillary tumor histologically benign was frequently followed by a subsequent development of similar tumors in the bladder and even the wound scar. He further points to the small tumors of papillomatosis which may subsequently have frank carcinoma, at times with metastases. Deming has concluded that one out of fourteen papillomas is likely to prove to be malignant—even as late as fifteen years after original treatment. Dean and Ash mention that papillomas have been known to metastasize.

The Tumor Registry of the American Urological Association feels it cannot predict the behaviour of papillomas on histological appearance with enough confidence to warrant use of the diagnostic term papilloma, and calls them papillary carcinoma, grade 1. Pathologists who have taken exception to this decision ask why polyp of the bowel or leukoplakia of the mucous membrane which also are potentially malignant are not designated grade 1. Facetiously it has been observed that some urologists cure *cancer* (grade 1) and some papillomas.

It is well to mention at this point that thirty to forty percent of papillomas (or papillary carcinomas, grade 1) never recur after electrocoagulation (fulguration).

Deming defines a papilloma or papillary carcinoma, grade 1, as "a papillomatous tumor with villi covered by transitional epithelial cells similar to the cells of the bladder with a central stalk of fibrous tissue and blood vessels. The epithelial cells are all uniform and regularly arrayed on a definite basement membrane which is not infiltrated." Tumors showing any change in regularity in the size, shape, and arrangement of cells, changes in the nuclei, or fusion of the villi, are considered by him to be papillary carcinoma. He states that many so-called benign papillomas contain minute evidences of malignant character and should not be considered benign tumors.

LOCATION

Bladder tumors vary in size from a few millimeters to huge masses filling the entire bladder. Location of these tumors is an important factor in deciding upon the mode of treatment. One-third to one-half of the tumors originate about the trigone. Next in frequency are the posterior and lateral walls

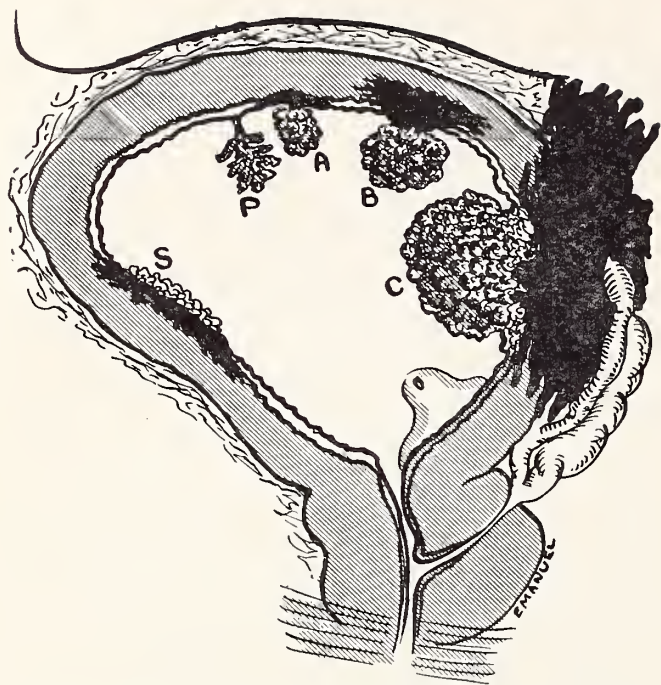


Fig. 1. Types of bladder tumors, and degrees of infiltration according to classification of Jewett.

P. Papilloma, S. Sessile flat or non-papillary tumor with infiltration.

A. Papillary carcinoma with infiltration confined to the submucosa and just to the muscularis.

B. Papillary carcinoma with infiltration into but not through the muscularis.

C. Papillary carcinoma with deep infiltration showing penetration of the muscularis and perivesical extension.

while the vault, anterior wall, and bladder neck are least likely to have a tumor. Some of these tumors can be reached and treated easily by cystoscopic instruments. Obviously others cannot, or only with difficulty. A tumor involving one or both ureter orifices or bladder neck and of moderate or large size, makes its surgical removal or destruction without impairing bladder function impossible, thus indicating the need for cystectomy.

METASTASES

In general, the incidence of metastases is low early in the disease and high in the late phase. Deeply infiltrating tumors regardless of histopathology show a very high rate of metastasis.

Poorly differentiated, deeply infiltrating epidermoid tumors metastasize earlier than poorly differentiated infiltrating papillary tumors. Most writers assume that spread is chiefly by way of the lymphatics, but Bandler and Higgins call attention to the blood stream route. The pelvic viscera communicate with the vertebral veins as do the hepatic and renal systems. Bony and hepatic implants are found without lung metastases. Skin implants have occurred.

Numerous reports on metastases show variation

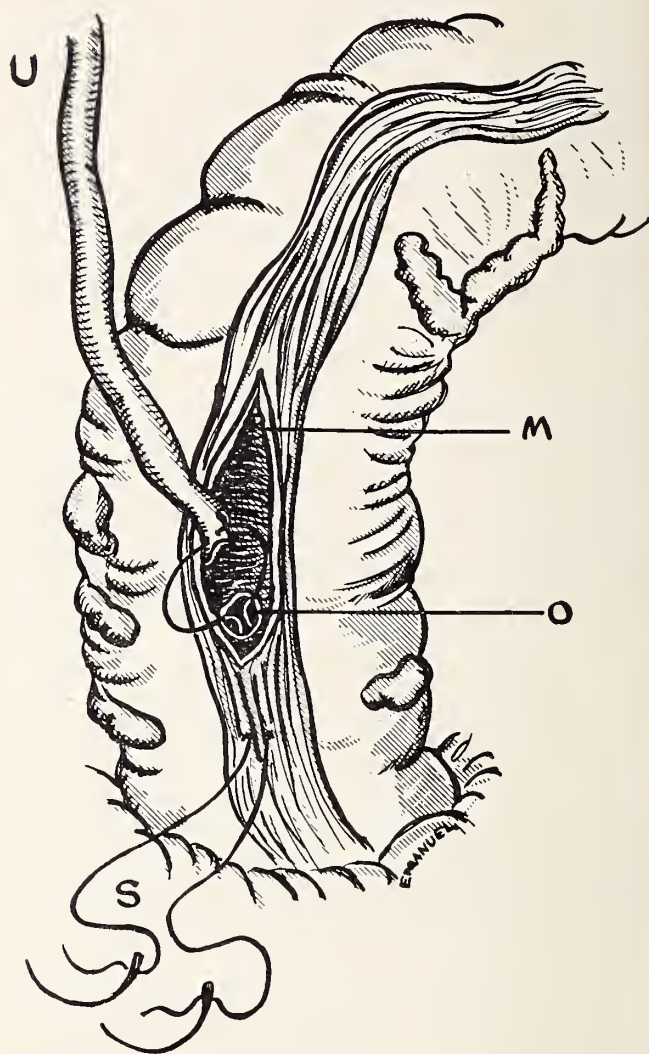


Fig. 2. The principle of the Coffey No. 1 operation of ureterosigmoidostomy.

After the ureter is anchored the incision in the muscle layer is closed over the ureter.

U. Ureter, S. Anchoring suture, M. Incision through the muscular coat down to the mucosa, O. Small opening in the mucosa for entry of the ureter into the sigmoid.

from ten to thirty-two percent, but most illuminating is the report of Jewett in 1947 on 107 autopsy cases. Of three non-infiltrating cases there were no metastases; of fifteen with only superficial infiltration, one; and of eighty-nine with deep infiltration, fifty-two!

The latter showed the following distribution: regional lymph nodes 33, liver 26, lungs 18, vertebral and pelvic bones 11, other sites 20. The bone metastases are osteoclastic. Jewett felt that if all grossly normal regional lymph nodes were sectioned an even higher incidence of metastases would have been found.

Colston and Leadbetter in a 1936 report based on 98 autopsy cases showed metastases in about 56 percent. Only 25 percent of the latter were in the pelvic and retroperitoneal nodes alone.

SYMPTOMS

These are nonspecific. A diagnosis of tumor of the bladder cannot be made from symptoms. Cystitis, prostatitis, vesical calculus, urethral stricture, and even obstructive prostatism may be simulated by a bladder neoplasm. The one suggestive complaint which should prompt an immediate investigation is hematuria, which appears early or late in about sixty to eighty percent of the patients. It is safe to say that vesical irritability is a signal for cystoscopy in all patients over 50. Hematuria obviously should be investigated at any age. Jewett has pointed out that fifty percent of admissions to the hospital have had symptoms over one year — too long a period after onset to permit an attempt at curative treatment.

DIAGNOSTIC AND PROGNOSTIC VALUE OF CYSTOSCOPY

Except for some inflammatory areas and the almost flat, nonpapillary infiltrating tumors which can cause confusion, most tumors within the range of vision of the cystoscopic lens can be identified and grossly evaluated. The cystoscopist can note the size, number, and location of the tumors. The significances of the location has been discussed. In general, the smaller the tumor the better the outlook. He further notes whether the tumor is sessile and therefore having a poorer prognosis, and the kind of pedicle on the papillary tumors. Those with very thin pedicles have the best prognosis.

But even the most expert cystoscopist cannot diagnose without considerable error the presence or absence of infiltration — or how deep it may be if the appearance of the tumor suggests that it may be infiltrative. On this most important prognostic point cystoscopy is unreliable.

GRADING AND BIOPSY

Grading is entirely within the realm of the pathologist and his microscope. Tissue offered for his opinion is described in terms of the degree of cellular differentiation and invasion. As noted before, the Bladder Tumor Registry of the American Urological Association considers the papilloma as grade 1 carcinoma, while grade 4 has been dropped and is included in grade 3.

Grading is not the most reliable guide to treatment or prognosis. Tumors are known to exhibit considerable variation in cellular differentiation in different portions of the same tumor mass. It may even show transitional cells in one area and epidermoid cells in another. Dean analyzed a series of one hundred cases discovered fifty-eight percent disagreement between the biopsy and operative specimens. A superficial portion of a tumor may be benign while its base may show unmistakable evidences of malignancy.

A recorded biopsy serves as a protection for the surgeon and the patient as proof of tumor, but it is not actually required for diagnosis. Cystoscopy can do that in almost all cases. Its greater value lies in its demonstration of presence or absence of infiltration — where cystoscopy fails. A biopsy to be adequate must include a portion of the base of the tumor and adjacent muscle tissue from the bladder wall. A small piece of tissue from a superficial portion of the tumor obtained by the inadequate small cystoscopic rongeur will not result in an accurate report. It may show cell differentiation permitting grading, but it will not show whether the growth has reached the muscle or penetrated it. So far Papanicolaou cytological examination does not appear to be useful in bladder tumor diagnosis. Urinary sediments in particular are most difficult for such diagnosis.

BIMANUAL EXAMINATION AND PROGNOSIS

In the over-all picture of cancer of the bladder with its high morbidity and low curability a note of optimism seems to have entered in the work of Jewett and Strong, who have placed emphasis on bimanual examination under anesthesia as an aid in prognosis, selection of cases for treatment, and in achieving early diagnosis.

Like Aschner in 1931, Jewett has concluded that the presence or absence of infiltration was the more reliable guide to the gravity of a given tumor than the histopathology. He has established criteria whereby the degree of infiltration can be deduced grossly by means of the bimanual examination. He placed infiltrating tumors into three categories:

- A: Infiltration limited to the submucosa.
- B: Limited to, but not through, the muscularis.
- C: Through the muscularis.

On theoretic grounds he concluded that complete destruction or extirpation of the tumor would produce potential curability in keeping with the degree of infiltration.

A—100%, B—86.8%, C—2.6%.

Applying this principle to a series of eighty cases in terms of five-year survival, he reported recently (1952) seventy-four percent for the superficially infiltrating tumors (A and B), and only three percent for the deeply infiltrating type (C).

Jewett contends that in ninety-one percent of cases the superficial and deeply infiltrating tumors can be distinguished if the patient is examined carefully bimanually under anesthesia (recto-abdominal in the male and simple pelvic in the female). He notes the following palpatory observations and their practical significance: (a) Extravesical extension with or without fixation. This spells incurability. (b) Stony induration without evidence of extravesical exten-

sion. Metastasis has occurred in the great majority of the higher grade tumors. (c) Rubbery induration without extravesical extension. There is a slightly lower incidence of metastases. If undifferentiated carcinoma can be excluded, complete destruction or extirpation of the tumor should result possibly in a higher percentage of cures. (d) No palpable induration. There is apt to be absence of metastasis and high potential curability.

Some urologists agree that this examination is valuable, but would not concede that it can be very accurate to a high percentage. However, Jewett insists that "practice makes perfect and if one keeps on trying the results will be more accurate."

THE UNTREATED PATIENT

The full impact of the deadliness of carcinoma of the bladder is appreciated in the several reports on the course of the disease in untreated cases. Forber showed ten percent five-year survival of thirty-three patients. Welsh and Nathanson reported ninety percent dead five years after onset of symptoms.

Sauer, Blick, and Meehan in a 1950 report on sixty patients showed none to be living by the end of twenty-one months. In this same report another corresponding sixty cases who had been given palliative therapy were reviewed. None were alive two years after admission. Palliation increased life for the group about 2.5 months. Patients with non-papillary solid tumors in both groups died about four to five months sooner than those with papillary tumors.

II

TREATMENT

Individual urologists and the numerous case reports attest to the undercurrent of pessimism associated with treatment of carcinoma of the bladder.

Except for papillomas (grade 1 papillary carcinomas) which do not infiltrate the bladder wall, enduring therapeutic results by all methods are not such as to induce complacency. Cure is hoped for much as one pins trust on an unpredictable "long shot."

The reasons for this lie in the insidiousness of onset, the frequently late diagnosis or inadequate or too conservative treatment when diagnosis is made early. In theory complete removal or destruction of the tumor should result in cure. In keeping with Jewett's classification on the basis of infiltration this objective is attainable in the superficial group but not the deep. Infiltration, metastases or extravesical extension undetected or unrecognized before treatment serve to turn a supposed probable cure into a palliative problem. The paucity of cures is reflected in well-docu-

mented series. Of ninety-five patients with grade 2 carcinoma or higher treated by conservative means, Royce reported ten "alive after five years." Of three hundred unselected cases treated by all methods of radiation and analyzed by Marshall, only seventeen percent showed "survival of five years" or more while only six percent could be considered true cures. A similar analysis by Marshall of a series treated by various surgical means including cystectomy led to the conclusion that the smallest possible rate of five years successful result is 4.3% with likelihood of improvement and significant palliation.

For procedures chiefly other than cystectomy, Higgins refers to a set of statistics compiled by the Carcinoma Registry for 226 cases to show in general what results urologists throughout the country are getting. The following is noted for five-year survival: grade 1 (papilloma) 58.4%; grade 2, 37.0%; grade 3, 21.8%; and grade 4, 5.8%.

EVALUATION OF RESULTS OF TREATMENT

Because of personal element in grading, variable terminology, failure to note infiltration, inadequate biopsies, inclusion of papillomas, smallness of many series, and follow-up periods of less than five years, comparison of the efficacy of the various modes of treatment on basis of reported series is difficult and often useless. There is still considerable controversy as to the best treatment for a given type of tumor. Many urologists combine the methods while others show steadfast preference for one approach. The practical guides to the usefulness of the methods are the opinions and comments of leading urologists of long experience, and they often show divergent views.

THE CURRENT METHODS OF TREATMENT

(1) Transurethral resection and/or fulguration electrocoagulation).

By means of cystoscopic instruments and high-frequency current the superficial bulk of the tumor is cut away and the base with a zone of normal tissue is "cooked" down to the deeper layers of the bladder wall. Small and medium-sized papillary tumors are most suitable for this method. Classically papillomas (papillary carcinoma grade 1) respond well, but it should be remembered that the bulk of them are likely to recur to be followed by new ones. Frequent follow-up is necessary. Deming followed one patient twenty-six years, during which period one or two new tumors appeared at intervals of one to four years without change in histology. Lowsley mentions an old lady in whom he has fulgurated at least 100 pea-sized papillomas in the course of many three-month interval follow-ups. So long as the papillomas are few they may be treated by this method.

Some urologists resect and fulgurate grade 2 carcinoma by this method but cut deeply into the muscle wall to remove the site of possible infiltration. In poor-risk patients with tumors of higher grade, they are attacked by this method. Hinman cautions that it will not cure sessile, flat infiltrating growths.

Disadvantages of this method are the danger of perforating the bladder, no guarantee that the infiltration if present has been destroyed, and as Higgins points out nothing can be done about the lymph nodes. This type of therapy is said to foster a temporizing attitude when used for infiltrating and the larger papillary tumors, and is said to account for some of the poor late results. Dean states that no type of electric current has yet proved adequate to control cancer.

(2) Transurethral implantation of radon seeds.

This consists of insertion of radon seeds under cystoscopic vision interstitially into and about the site of the tumor at prescribed distances apart and to a certain depth. Resection and fulguration are often combined with this method. It is applicable to single small and moderate-sized papillomas or papillary carcinomas suspicious of being infiltrative located in easily accessible areas, at least 1.5 cm. from a ureter orifice and 2 cm. away from the bladder neck.

This method is not technically difficult and has been quite popular. As with transurethral resection and fulguration, it leaves doubt as to the complete destruction of the malignancy. However, Dean, Keyes, Barringer, Watson, and Lenz have used this method, and Dean states that in selected cases up to forty percent of patients with carcinoma will show five-year survival without demonstrable tumor.

In contrast is the view of other leading urologists who have discontinued interstitial radiation and point to the extreme pain and morbidity incident to its use. These are long-standing ulcerations, cicatrized tissue about the ureter orifices causing upper tract obstruction and its consequences, sloughing, fistulas, intensified infection, incontinence, calcific incrustations and increased mortality apart from the cancer itself.

(3) Suprapubic cystostomy with resection and fulguration and/or interstitial radiation.

When the location and size of a tumor are such that transurethral approach is not feasible, a cystostomy is done and the same procedures are carried out as by the cystoscopic route. For interstitial radiation, radium-element needles which can be removed may be used instead of the permanent radon (emanation) seeds. Radium element in capsules can be applied to the surface of tumors by this route. Higgins reminds that resection and fulguration, and interstitial radiation by whatever route still neglect the surgical principle of treating malignant disease—block dissection of the regional lymphatic drainage.

(4) Segmental resection.

This is carried out for large or small tumors not accessible to transurethral approach and located in a portion of the bladder which can be removed without disturbing the function of the bladder. Higgins states that only in 27.5% can it be carried out without re-implanting a ureter or injuring the bladder neck or urethra. The ideal tumor for such resection is papillary, has little or no infiltration, is located in the vault, and permits removal with a wide margin (three to four centimeters) of normal bladder wall. In recent years many urologist have come to regard this procedure as a half measure not likely to remove the primary local growth completely.

(5) Roentgen therapy.

In earlier experiences with bladder carcinoma there was great enthusiasm for X-ray therapy as a method of cure. Through the years it has come to be considered not only dangerous but with some exceptions, unlikely to cure. A full curative dose cannot be given, and if excessive, the treatment is exhausting and causes cystitis, proctitis with intense and prolonged discomfort to the patient. Marshall indicates in discussing the surgical treatment of carcinoma of the bladder, that apart from the matter of cure the palliation offered by surgery is superior compared to that of all types of radiation treatment. X-ray therapy is useful to some extent in debilitated and old feeble patients with extensive disease and aids in controlling bleeding and referred pains.

(6) Cystectomy.

The swing back to cystectomy is the expression of admission that the other methods of treatment have been unable to cure carcinoma of the bladder. It is not a new procedure. Bardenheuer performed the first in 1887. It has come up again for re-evaluation in the light of more recent knowledge of the behaviour of carcinoma of the bladder, improvement in the techniques of urinary diversion, better pre- and postoperative care, and the advent of chemotherapy and antibiotics.

At present there is no standardization of the application or complete acceptance of cystectomy. Some have recommended it only after other procedures have failed, and as a palliative measure to improve the patient's comfort. Others plead that it not be used as a court of last resort, by which time local extension and metastases have occurred, and decry its use in palliation. Some are reluctant to use it because of the problem of disposing of the ureters. There is an understandable lack of enthusiasm for radical surgery particularly in patients around seventy, when life expectancy is slim.

The operation in its simplest form consists of removal of the bladder alone. Currently, the prostate and seminal vesicles are also removed. Marshall has

indicated that about 15% of the prostates show extension of the bladder tumor and that at the age incidence of carcinoma of the bladder, carcinoma of the prostate gland is also very probable. In the newest form of cystectomy as advocated by Higgins, Leadbetter, Colby, and others, the pelvic nodes are removed in a block dissection as in radical mastectomy. Higgins feels that results in general will be improved by cystectomy with lymph node dissection, particularly when it will be applied to those cases now treated by conservative means.

Bandler, representative of those who do not agree with the rationale of this node dissection, contends there is no assurance that spread has not ranged upward above the pelvic lymphatics or that distant metastases have not already occurred by way of the vertebral venous system communication as described by Batson, at the time of the pelvic node dissection.

Cystectomy of course implies disposal of the ureters. Diversion of the urine from the bladder is not a new idea. As early as 1894 transplantation of ureters was attempted. It is the work of Coffey beginning in 1911 that has had most influence in the present techniques of ureter transplantation into the lower colon. Of the three methods he advised, his first or "Coffey No. 1," which is essentially the introduction of the proximal end of the cut ureter into a small opening in the bowel and anchoring it there with a suture, has become the most useful. Numerous operators have modified it in some way. Most recently this has taken the form of a mucosa-to-mucosa anastomosis.

Thus to the operative dangers related to cystectomy are added those of ureterosigmoidostomy and its complications which include peritonitis, localized abscesses, urinary fistulas, ureteral stricture with secondary dilatation of the ureter and renal pelvis, pyelonephritis, impaired renal function and uremia,—necessitating retransplantations of the ureters to the skin, drainage of abscesses, nephrostomies, ureterostomies and nephrectomies. The modern use of chemotherapy and antibiotics has reduced these considerably.

Within the last two years attention has been called to the altered chemistry of the patient with bilateral ureterosigmoidostomy. Acidosis, hyperchloremia, potassium loss and nitrogenous retention due to the prolonged presence of urine in the colon have added to the problem of management of the patient who has survived the operation.

Cystectomy and bilateral ureterosigmoidostomy can be carried out in one, two, or three stages. Though longer and more tedious especially with node dissection, the leading urologist now recommend a one-stage operation if the patient's condition permits. Adequate node dissection can be done only in the one-stage procedure.

When ureters are found to be greatly dilated and atonic, transplantation to the skin is generally done. This has obvious disadvantages.

Operative mortality for cystectomy and ureteral transplantation was extremely high in the earlier days of their use. Today it is at reasonable and justifiable levels. Beer said of Papin that he collected eighty-one cases of implantation into the bowel with fifty-nine percent mortality. Early series of cystectomy and bilateral ureterosigmoidostomy show mortality ranging from twenty-one to fifty percent.

The more recent figures show significant reduction. Marshall in 1947 showed thirteen percent mortality for bilateral ureterosigmoidostomy and about three percent for cystectomy alone. Ferris and Priestly reported thirteen percent for the combined procedure, and Higgins has reported twenty-two cases with no deaths. Graves in 1950 showed 5.7 percent deaths for bilateral ureterosigmoidostomy and 8.7 percent for the combined operation.

The indications for cystectomy are not clear cut and there are borderline decisions to be made, but most urologists who do cystectomy, with some variation, apply the following indications:

- (a) When the tumor is in close relation to one or both ureters or bladder neck such that its removal or destruction will injure these structures and thereby destroy normal bladder function.
- (b) Tumors involving the greater portion of the bladder and of low grade with minimal or moderate infiltration and not removable by other less drastic means.
- (c) Papillomatosis of over fifteen tumors or uncontrollable by fulguration.
- (d) High-grade tumors which can be removed completely.

At the time of the operation the abdominal examination should reveal no evidence of metastasis, but a negative finding does not rule it out. The patient must be a good risk with good renal function. If the ureters and bowel are normal bilateral ureterosigmoidostomy may be done; if not, cutaneous ureterostomy is in order.

SUMMARY AND CONCLUSIONS

The great bulk of bladder tumors consists of papillomas, papillary carcinomas and squamous cell carcinomas. Cancer of the bladder is insidious in onset, usually metastasizes later in the disease, and is lethal to ninety percent of untreated patients by the end of five years. The commonest symptom is hematuria. The presence or absence of infiltration is the best guide to prognosis and treatment. There are several methods of treating carcinoma of the bladder, some of which may be combined, and none of which have

proved to be definitely curative in all cases. Papillomas can be cured in thirty to forty percent of patients, and the rest must be followed persistently for possible change to malignancy or uncontrollable papillomatosis. Excluding papillomas the over-all picture for permanent cure by current methods of treatment is poor.

A re-evaluation of total cystectomy which now includes pelvic node dissection is under way. More radical treatment of earlier lesions is advocated. The trend is to encourage overestimation rather than underestimation of bladder cancer and not allow the immediate advantages of conservative methods to sway decision away from the drastic but ultimately more beneficial treatment.

The mortality of cystectomy and bilateral uretero-sigmoidostomy is significantly lower than in the earlier days of these procedures. The disposal of the ureters in the bowel adds new problems of electrolyte balance and nitrogenous retention in the management of the patient with cystectomy.

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PILONIDAL SINUS — A TECHNIQUE OF PRIMARY CLOSURE

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Primary wound closure following the en bloc excision of pilonidal cysts and sinuses is more frequently carried out today than it was a decade ago. This has been due in part to the advent of modern chemotherapy, in part to the increasingly widespread recognition of the importance in wound healing of the following factors: hemostasis, complete obliteration of dead space, accurate apposition of tissue layers, avoidance of tension in the suture line, and the limitation of motion in the vicinity of healing tissue, and in part to the introduction of the gluteus maximus musculofascial flap technique of primary closure.

At the Veterans Administration Hospital, Togus, Maine, a number of different surgical methods of treatment have been employed with varying success. It is desired at this time, however, to present only a modified technique of primary closure, with which excellent immediate and short-term follow-up results have been obtained. This technique is applicable to a majority of the uncomplicated cases of pilonidal

cyst or sinus. In the presence of acute inflammation or abscess such a procedure is generally deferred. In cases where the disease process is extensive, modifications of this technique may be carried out although the principle of the musculofascial flap type of procedure, in which the resulting defect is completely obliterated, can frequently still be applied.

The patient is given a low-residue diet on admission to the hospital and on the day preceding the operation the bowel is thoroughly evacuated with cathartics and enemata. Spinal anesthesia is generally used. The lesion and all its ramifications are excised en bloc by means of an elliptical incision which is carried down to the sacrococcygeal fascia. Care is taken to look for unusual extensions of sinus tracts, such as the ones which occasionally extend close to the anal orifice or beneath the coccyx. All sinuses are probed, if possible, prior to excision, to determine the extent of the lesion. All dissection is done with a scalpel. Caution is not used as it is desired to have as little necrosis as possible. Undercutting of the skin

* From VA Center, Togus, Maine.

and subcutaneous areolar tissue from the gluteus maximus muscle is avoided. When the area is cleaned of all diseased tissue, it is packed with hot saline pads under pressure in order to effect hemostasis. A few fine catgut ties are usually necessary for bleeding vessels. Electrocoagulation has been used in several cases. With the hot pads in place, the specimen is now examined to see if removal has been complete. The fascia overlying the gluteus maximus muscle is now incised about one centimeter from its attachment to the sacrum, coccyx, and the closely invested sacrococcygeal fascia (Figure 1). It is incised for the

is closely adherent to the fascia lata which sheaths the gluteus maximus muscle. The wound is then irrigated, first with normal saline solution and secondly with an antibiotic mixture such as penicillin-streptomycin or sulfamylon-streptomycin solution. Interrupted far-and-near sutures of 30-gauge stainless-steel wire are now laid in the wound, catching both the skin and gluteal fascia in the same suture and also including a bite in the sacrococcygeal fascia in the midline of the wound. Four or five such wires are usually needed for the ordinary case of pilonidal sinus (Figures 2 and 3). When hemostasis is secured, the

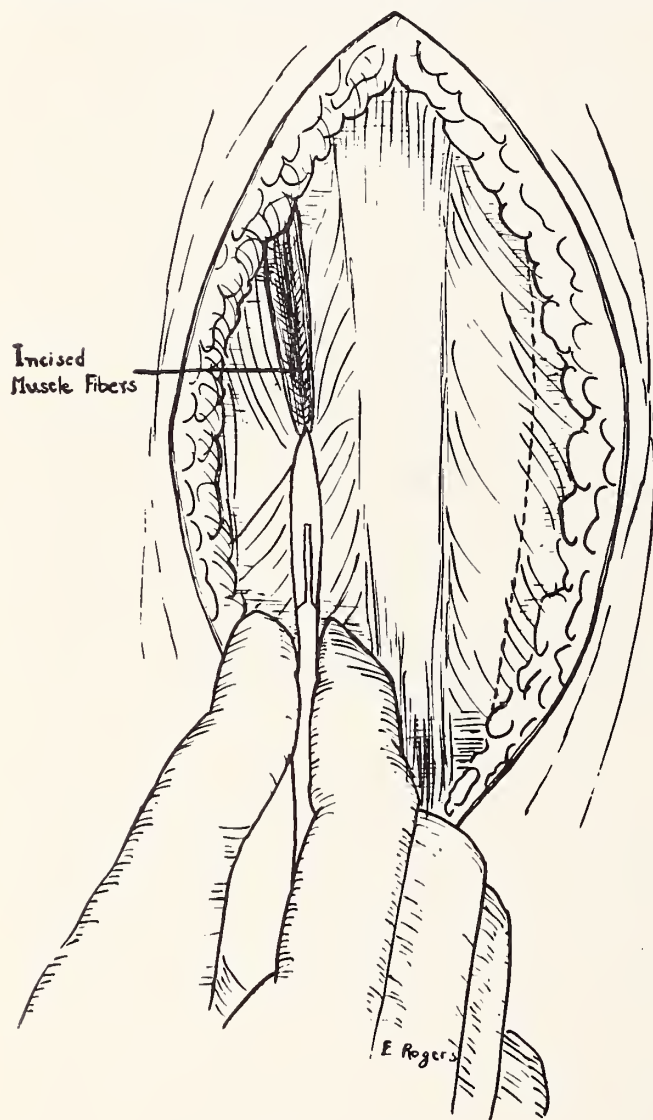


Figure 1

length of the wound, the incision being made deep enough to include some of the superficial muscle fibers. Allis clamps are then placed in this layer and traction is exerted to test the amount of mobilization which has been obtained. It should be possible to mobilize the fascial layer and some muscle across to the midline. As traction is exerted, it will be observed that the overlying subcutaneous tissue is also mobilized. Anatomically this subcutaneous layer of fatty tissue

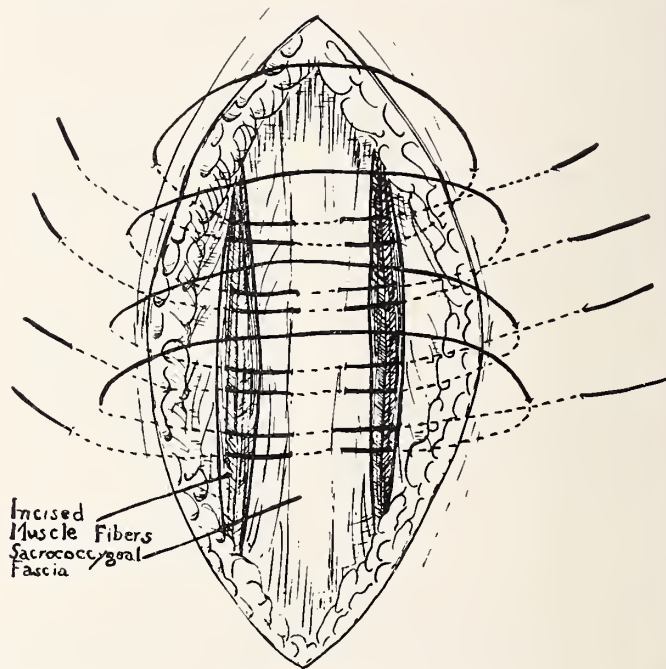


Figure 2

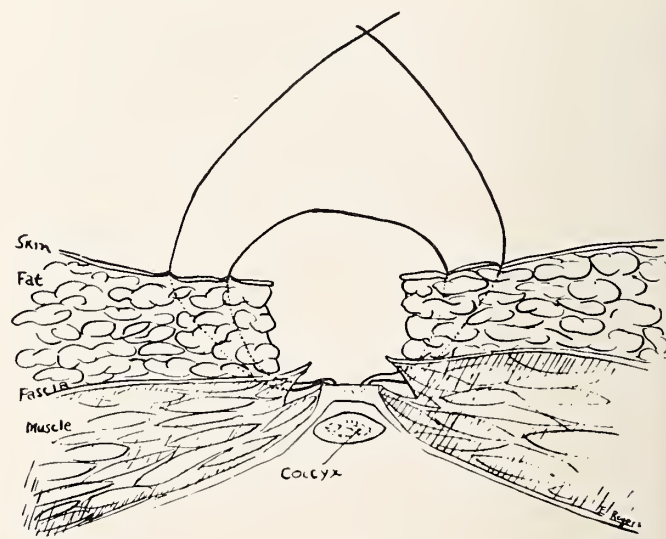


Figure 3

wire sutures are partially tightened. Skin sutures are now applied with particular effort being made to obtain accurate coaptation of epithelium, particularly

in the vulnerable inferior end of the wound, deep in the intergluteal cleft. Any remaining fluid is expressed from the wound by means of a gauze roll, clamps being inserted temporarily into one extremity of the wound in order to let the fluid escape. The wire sutures are now tied over two separate layers of gauze (Figure 4), a pressure dressing is applied

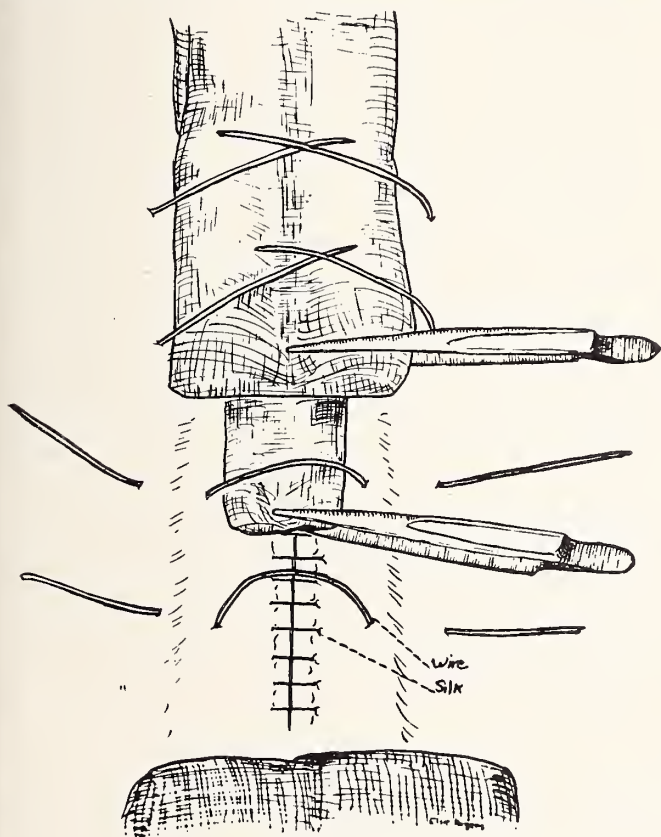


Figure 4

and the buttocks are taped together with adhesive plaster.

Postoperatively the patient is instructed to lie on his stomach or his side but not on his back. He is allowed to stand to void immediately after the operation but is requested to remain in bed most of the time during the first three days. He is placed on a constipating diet of clear fluids for the first three or four days and from the fifth to the ninth day is allowed full fluids. Paregoric, four c.c. three times a day, is given during the second period of five days. On this regime the patient does not generally find it necessary to move his bowels until the sixth or seventh postoperative day. Enemata if necessary may be ordered at this time. From the fourth to the ninth day he is permitted full ambulation but is not allowed to sit down. Prophylactic doses of penicillin and streptomycin are given during the postoperative period. The wound is dressed on about the ninth postoperative day, and the far-and-near sutures of stainless-steel wire are removed. The skin sutures may also be removed at this time if wound healing is complete.

RESULTS IN ELEVEN CONSECUTIVE OPERATED CASES

Eleven patients have been subjected to the operation described above. Two were cases of recurrent pilonidal disease. Four additional patients had had incision and drainage carried out on one or more occasions. Five cases were uncomplicated. In eight of the cases, wound healing was uncomplicated. In one case there was slight skin separation at the caudal end of the incision due to infolding of the epidermis, prolonging the patient's stay in the hospital an additional three days. In the second case, there was a wound hematoma with overlying wound separation of slight extent delaying his convalescence an additional three weeks. In a third case, there was serous discharge from two of the wire holes which responded to Sitz baths and parenteral penicillin. This patient's convalescence was delayed an additional two weeks. The eleven operations were carried out by four different surgeons. The three minor complications just described will serve to emphasize the necessity for meticulous attention to the details of the operative technique.

There have been no recurrences to date, although the follow-up period has been short. Two patients have been followed for a period of twelve months; the other nine patients have all been followed for less than a year. All of the patients have been well satisfied with the operative results and have been pleased with the absence of any tenderness in the region of the operative scar.

DISCUSSION

The etiology of pilonidal cysts and sinuses and the natural history of the development of the disease after surgery have been adequately discussed in a number of recent papers. A collective review of the entire subject has been published by Turell and Gladstone.¹ Numerous types of surgical treatment have been devised for these lesions, including the injection of sclerosing substances, marsupialization, the en bloc excision with open packing, and various methods of primary closure. Although primary closure has frequently been successful in the past, it has been in disrepute because of the relatively high percentage of recurrences of the disease following this technique. Failure of obliteration of the dead space resulting from en bloc excision is generally believed to have been one of the primary reasons for the frequent failure of many of the techniques of primary closure. Modifications of primary closure have, therefore, included skin grafting, relaxing lateral incisions, and partial obliteration of the defect by skin to fascia sutures. The mobilization of musculofascial flaps from the gluteus maximus muscle for closure of the large defect following en bloc excision of pilonidal cysts is the most recent and most satisfactory of

these methods. Modifications of this technique have been described by Miscall and Holden,² Shute et al.,³ Pope,⁴ Holman,⁵ and Ziegler et al.⁶ Following the introduction of this technique, primary closure has reached a new height of popularity.

It is the belief of this author that the advantages resulting from primary closure of pilonidal cysts outweigh the disadvantages which have been ascribed to it. These disadvantages include (1) a longer operating time, (2) necessity for hospital care in the postoperative period, and (3) the claim that there are more recurrences following the primary closure technique than there are following the open packing technique. The advantages consist of the following: (1) a rapid healing followed by development of a narrow scar, (2) the presence of a relatively mobile nonfixed cushion of fascia and fat over the bony prominences of the sacrum and coccyx, and (3) the greater speed of convalescence and shorter period of total morbidity. It is well to remember in respect to the open technique of operation, that even though the actual period of hospitalization may be short, it is invariably followed by a prolonged period of morbidity, during which time the patient pays repeated visits to the doctor's office for treatments, complete healing frequently not taking place for several months after the time of the excision. Furthermore, following the open technique, a relatively broad scar results which is adherent to the underlying sacrococcygeal fascia and which is, therefore, more tender and more easily traumatized than the scar from the primary closure technique.

Recurrences following the surgical treatment of pilonidal cysts and sinuses are due to one or more of the following factors: (1) inadequate removal of diseased tissue, the epithelial elements being left behind at the time of operation, (2) the development of subcutaneous abscesses resulting from the abrasion of the delicate skin which overlies poorly vascularized and therefore vulnerable scar tissue, (3) the invagination and burial of skin elements, which may sometimes be due to poor coaptation of the epithelium at the time of skin closure with resulting down-growth of epithelial tissue into the depths of the wound, (4) infected hematomas or infected serum collections in the depths of the wound. These last will frequently undergo complete absorption, but chronically infected granulation tissue may sometimes persist and finally result in the development of new sinus tracts. These different types of recurrences have been thoroughly described by Holman.⁵ Recurrence because of the inadequate excision of diseased tissue is probably the most important of these factors, and such recurrences may obviously take place after any type of operative procedure. Those recurrences believed due to local infection following injury of a poorly vascularized scar are less likely

to occur following primary closure than after healing by secondary intention because of the fact that the scar is smaller and less vulnerable to injury. The recurrences secondary to down-growth and burial of epithelial tissue should be adequately prevented by careful attention to technical details during the operation. Lastly, the proper obliteration of dead space by means of a musculofascial flap type of procedure and the adequate use of chemotherapeutic agents during and following the operative procedure should make development of recurrences due to infected fluid collections and infected granulation tissue much less frequent following the closed technique of operation.

The use of the far-and-near suture of stainless-steel wire is eminently suited to primary repair of this type of defect. There is a minimum of tension in this method of suture if it is loosely tied, and by means of its double action on each layer in question it distributes the force of traction over a wide area, thus minimizing tissue necrosis. This suture technique is said to have been used as far back as the Civil War, although it appears to be infrequently used at the present time, except in a very few institutions. The technique of its use in the closure of abdominal wounds has been described by Whipple and Elliott.⁷ Babcock⁸ has described it as a combined relaxing and coapting suture, one of the best sutures for use where there is tension.

SUMMARY AND CONCLUSIONS

(1) In the surgical treatment of pilonidal disease, the desired end results should be rapid healing; a short period of hospital and/or office care; prevention of future recurrences; the development of a narrow, nontender scar, which is resistant to trauma; adequate mobility of the scar without adherence to underlying sacrococcygeal fascia, and a fat and fascial pad over the sacrum.

(2) It is believed that these results are best obtained through the proper use of a technique of primary closure which utilizes mobilization of musculofascial flaps of gluteus maximus muscle in order to obtain complete obliteration of the large defect resulting from en bloc excision of the diseased area.

(3) A technique of primary closure whereby removable far-and-near sutures of stainless-steel wire are used in obtaining accurate apposition of all layers without tension has been described.

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REPORT ON ARTHRITIS PROGRAM

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F. A. SPELLMAN, M. D.*

Within the past two years at this hospital an effort has been made to evolve an integrated program for the diagnosis and treatment of arthritis. This report will attempt to assay in a general manner the accomplishments of this program to date. In addition, for the information of those physicians who may have occasion to refer arthritis patients to this center, the medical rationale and administrative details of the program will be reviewed. Two case histories will be cited to illustrate results of various types of therapy and to make known the facilities available at this center for arthritis therapy. The activities of the program will be considered in their diagnostic, therapeutic, and follow-up aspects. The discussion concerns rheumatoid arthritis predominantly but the principles involved apply equally well to other causes of joint enlargement such as osteoarthritis, gout, infectious arthritis, traumatic arthritis, the arthropathy of the collagen diseases and, to a certain extent, rheumatic fever.

From an administrative standpoint the following facts are pertinent to this report. Each arthritic patient is admitted to the Medical Service or transferred to it if already hospitalized on one of the other services. The responsibility for patient care remains with his Ward Physician during the entire hospital stay; however, at an appropriate time each case is presented to and examined by an Arthritis Board consisting of: 1. The Chief of the Medical Service. 2. The Chief of Physical Medicine and Rehabilitation. 3. The Chief Physiotherapist. 4. The Ward Physician. 5. The Chief of the Orthopedic Service. The progress of each patient is followed at weekly intervals by the Board and recommendations made for his treatment while hospitalized and after discharge. Since adequate follow-up treatment is essential to the success of this program, the patient is referred to his family physician for further care on discharge or, if Service-connected, to a fee basis physician or appropriate Veterans Administration Out-Patient Department. The patient is urged to have a copy of his discharge summary sent to his physician. This requires the patient's written permission. At approximately three-month intervals the patient is called back to the hospital for a brief examination and estimation of his progress. Again the

results of this re-evaluation are available to the patient's physician.

DIAGNOSTIC FEATURES

Once a patient suspected of arthritis is admitted to the Medical Service, the following procedures are undertaken:

1. A careful history and physical examination:

The history should include a search for precipitating causes. Now that hormonal therapy is frequently used, a careful system review becomes ever more important in bringing out existence of symptoms and diseases that might contraindicate such therapy, i.e., diabetes mellitus, peptic ulcer, psychiatric aberrations, tuberculosis, endocrine disorders, and infections. Physical examination includes pertinent measurements such as chest expansion, estimation in degrees of range of motion of various joints and measurement in inches of actual joint swelling. Accurate estimation of future progress is impossible without such mensuration. Physical examination also includes a search for subcutaneous nodules, involvement of tendon sheaths, and muscular atrophy.

2. Usual laboratory data obtained:

Complete blood count, sedimentation rate (Westergren), urinalysis, blood uric acid and urea nitrogen, agglutinations for brucellosis, serum proteins and albumin-globulin ratio. Heparinized blood and bone marrow are examined for "L.E.Cells," if the clinical picture warrants. Electrocardiograms and vital capacity are done routinely. The following supplementary laboratory data is obtained prior to use of ACTH or Cortisone: Fasting blood sugar, CO₂ combining power, serum chlorides, fasting eosinophil count. More unusual tests, such as determination of 17 Ketosteroid excretion, are done if indicated.

3. X-ray Survey:

For evidence of osteoporosis and evidence of cartilage and bone destruction as well as the lesions of gout, osteo-arthritis, calcification of para-spinal ligaments, sclerosis of sacroiliac joints and malignant lesions.

* From VA Center, Togus, Maine.

4. Other diagnostic procedures:

- a. Aspiration of synovial fluid and its examination for alteration in the character of the mucin content as described by Bauer.² Smears and cultures of the fluid are done especially if gonorrheal arthritis is suspected.
- b. Although a search for "foci of infection" is often fruitless in the average case of rheumatoid arthritis, it is considered worthwhile to obtain smears and cultures of prostatic secretions and to survey the teeth for abscesses.
- c. Biopsy of subcutaneous nodules, muscle, synovial tissue and bone lesions are obtained if the diagnostic work-up warrants.

5. Presentation to the Arthritis Board:

This group is particularly fitted by special training, enthusiasm, and interest in arthritis, to review the diagnostic conclusions and therapeutic recommendations of the Ward Physician. The Board examines the patient, reviews laboratory and X-ray data, and surveys the patient's progress to date. The recommendations of this Board are then formally entered in the patient's chart. An effort is made to use the diagnostic and therapeutic criteria and terms of the American Rheumatism Association in these reports.¹

6. Approximately twice a year arthritis consultants of national prominence visit the Center to see diagnostic problems and to convey the latest advances in arthritic therapy to the staff. The overall progress of the Arthritis Program is reviewed at such times.

THERAPEUTIC CONSIDERATIONS

Although it must be admitted that the advent of ACTH and Cortisone have immeasurably brightened the therapeutic outlook in arthritis, we feel that the older, well-tried forms of treatment should continue to be the most important and basic methods underlying the formulation of this program. These methods may be listed and briefly discussed as follows:

1. Bed rest—often for several weeks or months in amounts varying from a few hours per day to complete bed rest. This is especially indicated to remove stress from involved weight bearing joints. Special care is taken to provide a level resting surface, through use of bed boards, and a firm mattress. A foot board aids in prevention of foot drop and small pillows under the neck, lumbar spine and knees may be used to prevent deformities or muscle spasm in those areas. Pressure points are carefully watched in immobile patients.
2. Good nutrition. Many patients long bedridden with severe active rheumatoid arthritis suffer

marked anorexia and present a therapeutic challenge from the dietary standpoint. Contact diets and frequent high-protein, high-vitamin supplements find their place here. The anemia of these patients, as well as the hypoproteinemia not infrequently seen in them, may require whole blood transfusions. Other obese patients may require carefully supervised weight reduction to relieve stress on weight-bearing joints.

3. Salicylates are used liberally in dosages of four to eight grams per day, if tolerated. Enteric-coated sodium salicylate often seems to cause less gastro-intestinal distress than aspirin. Patients being maintained on rather low dosages of Cortisone may find the supplementary use of salicylates will relieve minimal arthralgia, obviating the need for larger doses of the hormone.

4. Physiotherapy and Occupational Therapy:

These Departments provide the very heart of the therapeutic regime and offer the following aides and facilities for therapy.

- a. Each patient is seen in consultation by the Chief of Physical Medicine and Rehabilitation who enters a formal consultation note in the chart. This Department also sends the Ward Physician progress notes on each patient at regular intervals.
- b. Muscle testing and the type of measurements mentioned above.
- c. Programs of passive and active exercise in graduated amounts as prescribed by the Chief of Physical Medicine. The patient is instructed particularly in postural and deep breathing exercises and is encouraged to continue these daily after discharge. Such exercises prevent further deformities and maintain postural gains already made. Deep breathing exercises discourage dorsal kyphosis and fixation of the rib cage with ensuing reduction in pulmonary function. Occupational therapy prescriptions stress projects which will encourage maximum use of affected parts and are of great help in regaining skilled movements.

The Department of Physical Medicine is equipped to provide the following types of therapy as well:

Cabinet, paraffin, and whirlpool baths, needle sprays and other forms of hydrotherapy, resistance exercises, and various types of gymnasium equipment are available. Hot pack machines may be used directly on the wards, if necessary, for bedridden patients. Trained physiotherapists give passive and active exercises at the bedside to such individuals as well.

5. Chrysotherapy :

Gold salts are used in selected cases.

6. X-ray Therapy:³

This form of treatment is beneficial only in rheumatoid spondylitis. Patients requiring this therapy are transferred to the Veterans Administration Hospital, West Roxbury, Massachusetts. Service-connected patients may be referred to nearby civilian hospitals for this treatment on an out-patient basis.

7. Relief of muscle spasm, not only through physiotherapy, but particularly through such agents as D-tubocurarine in oil⁴ or Tolserol. Counter traction on antagonists to the muscle in spasm often brings relief of pain.

8. Correction of postural defects or deformities, if possible, and prevention through proper exercises and especially through construction of resting splints and body jackets. Resting splints are utilized primarily to guard against deformities such as ulnar deviation and contractures of fingers, elbows, and knees that may develop during the night hours. Plastic body jackets are tailored from a plaster model to the individual with spondylitis and ideally should extend from the manubrium sternum to the symphysis pubis in front, while being cut rather low in back to D8 or D10. After discharge from the hospital such a jacket is worn during working hours. The jacket is removed part of the day to prevent disuse atrophy of various muscle groups. Corrective orthopedic procedures of a surgical nature are considered when indicated.

9. Dermatological consultation is obtained in such syndromes as psoriatic arthropathy.

10. Vocational guidance is offered to those Service-connected veterans whose physical status may prevent return to their former occupations.

11. Psychotherapy is obtained in this program largely through a friendly physician-patient relationship.

12. Use of ACTH and Cortisone :

Since rheumatoid arthritis particularly is a chronic disease given to spontaneous remissions, the above measures are given an adequate trial at first in an effort to judge the activity and course of the disease in each individual patient. If, however, the economic status of the patient precludes prolonged bed rest, prompt use of ACTH or Cortisone is considered, providing no contraindications to their use exist. This concept fits well with the therapeutic aim of the program, which is return of the arthritic patient to economic usefulness or, if this is not possible, at least to better adjustment within his home environment. We have been reluctant to start hor-

monal therapy in other than acutely and severely ill patients where it is known that such treatment cannot be continued for economic reasons after discharge. This aspect of the question does not arise in the Service-connected arthritic.

At this point it may be well to point out that in a Service-connected case the Veterans Administration requires approval for the use of ACTH or Cortisone by a Veterans Administration Hospital before it will be financially liable for their use. The recommendations of the Arthritis Board are used by the Out-Patient Department in approving use of these drugs for patients being treated at home by Veterans Administration authorized physicians. In this manner each patient receives the benefit of an impartial and well-grounded opinion as to whether or not he should receive these powerful drugs. It should be stressed that opinions of the Board are not inflexible and that a decision against use of ACTH or Cortisone might be reversed in a few weeks, if new developments in any given patient seemed to warrant it.

Our practice has been to start with intravenous ACTH—20 mg. per day intravenously in 1000 c.c. of 5% glucose in distilled water over an 8-hour period, this dosage being tapered off gradually after approximately one month, at which time ACTH is stopped and the patient switched to Cortisone intramuscularly or orally in dosage ranging from 100 to 150 mg. daily. Potassium chloride 1 Gm. q.i.d. is given throughout hospital and home use of these drugs. The patient is checked carefully for salt and water retention daily and for the occurrence of the gastro-intestinal, electrolyte, psychiatric, and infectious complications of hormonal treatment that have been well-documented elsewhere. We have come to feel that once Cortisone has been started the physician is committed to continue its long term use in the rheumatoid patient. Some of our patients are doing well on maintenance dosages of Cortisone lower than those mentioned above. Whether or not the disease process in some of these patients will burn itself out and no longer require hormonal suppression remains speculative at present. By chance, the gastro-intestinal, electrolytic and psychiatric aberrations that have occurred in this hospital that may be related to use of ACTH and Cortisone have occurred in patients with rheumatic fever or allergies, with the exception of two minor instances of salt and water retention. In general, we can report the same dramatic changes resulting from ACTH and Cortisone therapy in rheumatoid arthritis that other groups have noted, i.e., rapid lessening of pain and muscle spasm,

lowered sedimentation rate, improvement in the blood count. In several instances it has been possible to obtain increased range of motion of affected parts quickly, permitting more ideal construction of splints and body jackets and increased tolerance for desirable physiotherapeutic procedures.

The following brief case reports are presented to illustrate what may be accomplished with conservative arthritic therapy as well as with these methods combined with the more dramatic benefits of ACTH and Cortisone:

CASE No. 1

A 41-year-old white male first noted pain and stiffness in the ankles, knees, back, and jaw 7 years prior to his third admission to this hospital in 1949 when the present arthritis program had not been started. For 3 months prior to that admission he had noted progressive swelling and stiffness of various joints plus onset of an erythematous eruption on the prepuce and entire penis. Physical examination revealed an obese white male walking with difficulty with the aid of a cane. B.P. 112/60. Knees were flexed and head carried forward of body. The left knee was swollen, tender and immobile; the right knee was swollen, tender and motion limited to 80°. Both ankles were swollen, tender and limited in motion.

Laboratory Data: Red blood count 3.6 million. Hemoglobin 12 grams. Hematocrit 35. Urinalysis negative. Erythrocyte sedimentation rate (Westergren) 131 mm. per hour. Uric acid 2.2 milligrams percent.

X-rays revealed osteoporosis of the left ankle and of the carpal bones with bilateral obliteration of the metacarpophalangeal joints and similar findings in the joints of the feet.

Course in Hospital: The first several months of the hospital course were characterized by progressive, acute rheumatoid involvement eventually involving nearly every joint. The affected joints became swollen, erythematous, and acutely painful with marked limitation in motion and eventual development of multiple contractures. The patient was acutely febrile for several months. During the acute flareup psoriatic lesions previously confined to the genitals spread over the entire body. Treatment over the months consisted of bed rest, extensive physiotherapy, supplementary vitamins, salicylates, and gold salts, plus several blood transfusions. This phase of the illness was prolonged and severe. The psoriatic lesions responded gradually to use of coal tar and ultraviolet radiation.

After the Arthritis Program had been started and the patient was seen on Arthritis Rounds in July of

1950, he was beginning to experience a remission of the acute arthritic process and the psoriatic lesions had practically cleared. A trial of D-tubocurarine in oil and beeswax was recommended as well as vigorous continuation of physiotherapy. The latter included use of a walker to encourage mobility coupled with use of resting splints to upper and lower extremities in an effort to correct existing deformities and prevent others. Accurate measurements of deformities and limited joint movements were charted from time to time as the patient's slow but steady progress continued. Gradually the sedimentation rate dropped to 31. By January, 1951, the patient was ambulatory with use of canes and was discharged to his home. During this acute illness Grade III aortic systolic and diastolic murmurs developed as did cardiac enlargement and electrocardiograph evidence of left ventricular strain. These findings mitigated against the use of ACTH and Cortisone.

Comment: This patient illustrates the value of conservative but vigorous therapy in helping a patient with chronic rheumatoid arthritis through a profound exacerbation of his disease. It is quite possible that, had the present program been in effect at the start of his illness, earlier attention to prevention of contractures would have lessened the severity of residual contractures existing when a spontaneous remission in the activity of the basic disease process ensued. He is now followed at six-month intervals and, although continuing to manifest deformities of the hands, back, knees and ankles, he is ambulatory at home and has been in a prolonged remission as far as his rheumatoid arthritis is concerned. There has been considerable discussion in the literature about the occurrence of cardiac lesions in rheumatoid arthritis.⁵

CASE No. 2

A 30-year-old white male weaver was admitted on 9-6-50 complaining of intermittent arthralgia of six-years' duration. In July, 1948, the patient became bedridden at home for several months but following an admission to this hospital in 1949 he became able to get about the house with crutches. Three weeks prior to the present admission he noted onset of acute pain, stiffness, and limitation of motion in multiple joints. He became intermittently febrile and lost weight. Physical examination revealed a pale, thin, emaciated white male complaining of pain in both knees, hips, and shoulders. Flexion and extension of the elbows was limited to 30°. Extension of the wrists was limited to 15°. There was fusiform swelling of the proximal interphalangeal joints of all fingers plus contractures of all fingers except the thumbs. The hips were moved en bloc. Rotation of the thighs was impossible because of pain in the hips. Both knees were swollen.

Continued on page 259



EUGENE H. DRAKE, M. D.
President, Maine Medical Association
1952 - 1953

EUGENE H. DRAKE, M. D.

President, Maine Medical Association

1952 - 1953

As the Maine Medical Association approaches its 100th Anniversary, it has inaugurated as President for 1952-1953 — Eugene H. Drake, A. B., M. D.

Dr. Drake lives on Old County Road, South Gorham, and maintains his office at 58 Deering St., Portland, Maine.

The new President was born in Pittsfield, Maine, on August 7, 1892, son of Orville H. and Lelia Plumstead Drake. He graduated from the local Academy, Maine Central Institute in 1910 and received an A. B. from Bates College in 1914, and was graduated with a degree in medicine from the Maine Medical School in 1919. After graduation he served as an interne in the Maine General Hospital, Portland, Maine.

He established an office in Portland after his internship where he has carried on his practice in internal medicine up to the present time. In 1922, Dr. Drake married Effie I. Potter.

Dr. Drake has been a member of the Staff of the Maine General Hospital since 1923. During this period he has served as Chief of Medical Staff from 1937 to 1948 and now serves as Associate Chief. During these years he has taken Post-Graduate Courses in Heart Disease at the Harvard Medical School and courses in Internal Medicine in London and Vienna. From 1946 to 1950 he served as President of the Medical Staff and now holds the position as Chief of the Department of Electrocardiography and Director of the Cardiac Clinic as well as Chairman of the Educational Committee.

He is a Past President of the Portland Medical Club; Member of the Cumberland County Medical Society; Fellow of the American Medical Association; Fellow of the American College of Physicians (formerly Governor for Maine); Former member of Maine Medical Association Council for the First District and former Chairman of the Health Insurance Committee; Member of the American Heart Association; Member of New England Heart Association (Vice President at one time); Member Maine Heart Association (President in 1950). He is Cardiac Consultant at the Veterans Administration Hospital, Togus, and Medical Consultant at the Eastern Maine General, Webber, Henrietta Goodall and U. S. Marine Hospitals, and a member of the Board of Trustees of Maine Central Institute.

Dr. Drake had a long and distinguished career in the Navy during World War II from 1941 to 1946, serving as Commanding Officer of Volunteer Medical Unit 1-3 and three years on Navy Hospital Ship, Solace. He was a recipient of Bronze Star Medal and retired from active service as a Captain in the M. C., U. S. Naval Reserve.

When time from his large practice permits he enjoys his farm on the Old County Road, carrying on with his capable wife about all the activities of a going farm.

EDITORIAL

A Little About the June Meeting



DR. NICKERSON



DR. BELKNAP

The annual session of the Maine Medical Association, which was held at The Samoset in Rockland, June 22, 23 and 24, will remain in the minds of all those in attendance as one of the best. There was a total registration of 655 (the largest on record), which included 293 members of the Association, 221 guests and 141 members of the Woman's Auxiliary. It seems only fitting to record here our appreciation to the Manager of the Samoset and members of his staff, for the friendly service rendered during the entire session.

This page is primarily for the purpose of acquainting you with your new Officers for 1952-1953, headed by Dr. Eugene H. Drake, President. At the meeting of the House of Delegates on Monday, June 23rd, Dr. Norman H. Nickerson of Greenville, was elected President-elect; Dr. Karl V. Larson of East Machias, was elected Councilor for the Fifth District, and Dr. Armand Albert of Van Buren, Councilor for the Sixth District. And, on Tuesday, June 24th, the

Council elected Dr. Robert W. Belknap of Damariscotta, Chairman; W. Mayo Payson of Portland, Executive Secretary, and Esther M. Kennard of Portland, Secretary-Treasurer.

Dr. Thomas A. Foster of Portland, was elected Editor of the JOURNAL at a meeting of the Council on Sunday, June 22nd. As you all know, Dr. Foster has served the Association in many capacities; as President, Councilor, Councilor Chairman and on numerous committees.

In this issue of the JOURNAL you will find the names of Standing and Special Committee members, several committee reports which were presented during the annual session, and the Auditor's Report. In the next few issues we are going to bring you more details of the meetings of the House of Delegates, the legislative and policy-making body of this Association, and of the meetings of the Council. Through these reports it is hoped that you will all have a clear picture of the proceedings of these two groups.

STANDING COMMITTEES — A. M. A. DELEGATE

The Nominating Committee presented the following nominees for the Standing Committees for 1952-1953, and for a delegate to the American Medical Association to serve from January 1, 1953, to January 1, 1955, who were elected at the Second Meeting of the House of Delegates at the Annual Session of the Maine Medical Association at Rockland, Maine, June 23, 1952.

NOMINATING COMMITTEE

First District, CARL E. RICHARDS, M. D., Sanford.
Second District, JAMES A. MACDOUGALL, M. D., Rumford, *Chairman*.
Third District, STANLEY R. LENFEST, M. D., Waldoboro.
Fourth District, ALLAN J. STINCHFIELD, M. D., Hallowell.
Fifth District, PHILIP L. GRAY, M. D., Blue Hill.
Sixth District, RALPH C. STUART, M. D., Guilford.

Scientific Committee

C. Lawrence Holt, M. D., 29 Deering St., Portland, *Chairman*
 Ralph C. Stuart, M. D., Guilford
 J. Robert Downing, M. D., 37 Storer St., Kennebunk
 The Secretary, ex-officio

Legislative Committee

Paul D. Giddings, M. D., 31 Western Ave., Augusta, *Chairman*
 Clyde I. Swett, M. D., Island Falls
 James H. Crowe, M. D., 121 Main St., Ellsworth
 Francis A. Winchenbach, M. D., 910 Washington St., Bath
 Stephen A. Cobb, M. D., 28 Winter St., Sanford
 W. Mayo Payson, Portland Clerk
 The Secretary, ex-officio

Committee on Medical Education and Hospitals

Waldo A. Clapp, M. D., 215 College St., Lewiston, *Chairman*
 Clyde I. Swett, M. D., Island Falls
 John R. Lincoln, M. D., 22 Arsenal St., Portland
 Hugh A. Smith, M. D., 768 Union St., Bangor
 Irving I. Goodof, M. D., Thayer Hosital, Waterville
 The Secretary, ex-officio

Rural Health Committee

Storer W. Boone, M. D., Presque Isle, *Chairman*
 Norman H. Nickerson, M. D., Greenville
 Harry Brinkman, M. D., 47 Perham St., Farmington
 Stanley R. Lenfest, M. D., Waldoboro
 Wallace E. Viles, M. D., Turner
 Harvey C. Bundy, M. D., Milo
 W. Mayo Payson, Portland, Clerk

Medical Advisory Committee

Allan Woodcock, M. D., 35 Second St., Bangor, *Chairman*
 Carl M. Robinson, M. D., 31 Deering St., Portland
 C. Harold Jameson, M. D., 463 Main St., Rockland
 Philip L. Gray, M. D., Blue Hill
 Thomas A. Martin, M. D., 203 State St., Portland
 Oscar F. Larson, M. D., Machias
 Gerald H. Donahue, M. D., Presque Isle
 The Secretary, ex-officio

Board of Ethics and Discipline

(One Year)
 H. Danforth Ross, M. D., 28 Winter St., Sanford, *Chairman*
 Leon D. Herring, M. D., Winthrop
 (Two Years)
 Howard L. Apollonio, M. D., 7 Talbot Ave., Rockland
 Foster C. Small, M. D., 169 High St., Belfast
 (Three Years)
 Gordon N. Johnson, M. D., Houlton
 John A. Greene, M. D., 96 Congress St., Rumford

Public Relations Committee

Warren E. Kershner, M. D., 119 Front St., Bath, *Chairman*
 M. Tieche Shelton, M. D., 21 Western Ave., Augusta
 Theodore C. Bramhall, M. D., 49 Deering St., Portland
 Forrest B. Ames, M. D., 255 Hammond St., Bangor
 Ralph A. Goodwin, Sr., M. D., 56 Denison St., Auburn
 The Secretary, ex-officio

Investment Committee

Warren E. Kershner, M. D., 119 Front St., Bath, *Chairman*
 Elton R. Blaisdell, M. D., 12 Deering St., Portland
 Emerson H. Drake, M. D., 29 Deering St., Portland

Delegate to the American Medical Association

Martyn A. Vickers, M. D., 268 State St., Bangor

SPECIAL COMMITTEES

1952 - 1953

The following Special Committees for 1952-1953 have been appointed by the President,
Eugene H. Drake, M. D., of Portland.

Health Insurance Committee

William F. Mahaney, M. D., 338 Main St., Saco, *Chairman*
Clyde I. Swett, M. D., Island Falls
Kenneth J. Cuneo, M. D., 31 Summer St., Kennebunk
Eugene E. O'Donnell, M. D., 32 Deering St., Portland
Kenneth W. Sewall, M. D., 173 Main St., Waterville
Linus J. Stitham, M. D., Dover-Foxcroft
Francis A. Winchenbach, M. D., 910 Washington St., Bath
William V. Cox, M. D., 133 Court St., Auburn
Alvin A. Morrison, M. D., 57 Deering St., Portland
W. Mayo Payson, Portland, Clerk

Committee on Blood Transfusions

Richard C. Wadsworth, M. D., 489 State St., Bangor, *Chairman*
Franklin F. Ferguson, M. D., 22 Arsenal St., Portland
Charles F. Branch, M. D., 69 Gamage Ave., Auburn
Gerald H. Donahue, M. D., Presque Isle
John F. Reynolds, M. D., 101 Main St., Waterville

Amy W. Pinkham Fund Committee

Clair S. Bauman, M. D., 177 Main St., Waterville, *Chairman*
Virginia C. Hamilton, M. D., 900 Washington St., Bath
Albert M. Carde, M. D., Milo
Norman H. Nickerson, M. D., Greenville
Thomas A. Foster, M. D., 131 State St., Portland
Ella Langer, M. D., State House, Augusta
Philip G. Good, M. D., 38 Deering St., Portland

Veterans' Affairs Committee

Philip O. Gregory, M. D., Boothbay Harbor, *Chairman*
William C. Burrage, M. D., 57 Deering St., Portland
Allan C. Hurd, M. D., 72 Church St., Gardiner
Maynard B. Colley, M. D., Wilton

Diabetes Committee

Elton R. Blaisdell, M. D., 12 Deering St., Portland, *Chairman*
Paul R. Chevalier, M. D., 355 Pine St., Lewiston
Frederic B. Champlin, M. D., 216 Main St., Waterville
Lyman O. Warren, M. D., 156 North Main St., Brewer
Charles W. Capron, M. D., Eastport
Gerald H. Donahue, M. D., Presque Isle

Arthritis Committee

Philip P. Thompson, Jr., M. D., 704 Congress St., Portland, *Chairman*
Allan J. Stinchfield, M. D., 6 Warren St., Hallowell
Robert O. Kellogg, M. D., 316 State St., Bangor
Robert A. Frost, M. D., 108 Summer St., Auburn

Committee on Mental Health

Margaret R. Simpson, M. D., Togus, *Chairman*
C. Harold Jameson, M. D., 463 Main St., Rockland
Amy L. Cattley, M. D., 477 Main St., Lewiston
Byron V. Whitney, M. D., 156 State St., Bangor
David Davidson, M. D., 45 Deering St., Portland

State Committee — National Education Campaign

Martyn A. Vickers, M. D., 268 State St., Bangor, *Chairman*
Francis A. Winchenbach, M. D., 910 Washington St., Bath
William F. Mahaney, M. D., 338 Main St., Saco
Gerald H. Donahue, M. D., Presque Isle
Armand Albert, M. D., Van Buren
John F. Reynolds, M. D., 101 Main St., Waterville

Committee on Conservation of Vision

Howard F. Hill, M. D., 33 College Ave., Waterville, *Chairman*
Paul Maier, M. D., 723 Congress St., Portland
Paul E. Floyd, M. D., 2 Middle St., Farmington
Otis B. Tibbetts, M. D., 33 Court St., Auburn
Warren E. Kershner, M. D., 119 Front St., Bath
Dexter J. Clough, 2nd, M. D., 224 State St., Bangor

Tuberculosis Committee

Seth H. Read, M. D., 15 Church St., Belfast, *Chairman*
George E. Young, M. D., 159 Water St., Skowhegan
Wilbur B. Manter, M. D., 1 Fern St., Bangor
William B. Grow, M. D., Central Maine San., Fairfield
Francis J. Welch, M. D., 44 Deering St., Portland
Lester Adams, M. D., Western Maine San., Greenwood Mt.
Edward A. Greco, M. D., 12 Pine St., Portland
Dean Fisher, M. D., State House, Augusta
George C. Howard, M. D., Guilford

Committee on Maternal and Child Welfare

Thomas A. Foster, M. D., 131 State St., Portland, *Chairman*
Clair S. Bauman, M. D., 177 Main St., Waterville
Daniel F. Hanley, M. D., Brunswick
Alice A. S. Whittier, M. D., 143 Neal St., Portland
Virginia C. Hamilton, M. D., 900 Washington St., Bath
Theodore M. Stevens, M. D., 148 State St., Portland
Eugene B. Griffiths, M. D., Presque Isle
Norman B. Murphy, M. D., 31 Western Ave., Augusta

Cancer Committee

Forrest B. Ames, M. D., 255 Hammond St., Bangor, *Chairman*
Romeo A. Beliveau, M. D., 89 Pine St., Lewiston
John F. Reynolds, M. D., 101 Main St., Waterville
Gordon N. Johnson, M. D., Houlton
Magnus F. Ridlon, M. D., 99 Broadway, Bangor
Isaac M. Webber, M. D., 29 Deering St., Portland

Committee on Civil Defense

Charles W. Steele, M. D., 472 Main St., Lewiston, *Chairman*
Ralph A. Getchell, M. D., 690 Congress St., Portland
Harry Butler, M. D., 77 Broadway, Bangor

District Members:

1st, Albert W. Moulton, M. D., 180 State St., Portland, *Deputy Chairman*
2nd, Garfield G. Defoe, M. D., Dixfield
3rd, Frederick C. Dennison, M. D., Thomaston
4th, Harold E. Small, M. D., 31 Grove St., Augusta
5th, M. Allan Torrey, M. D., 75 State St., Ellsworth
6th, Richard C. Wadsworth, M. D., 489 State St., Bangor

Members-at-Large:

Roscoe L. Mitchell, M. D., 97 Water St., Hallowell
 Clark F. Miller, M. D., 778 Minot Ave., Auburn
 Col. O. H. Stanley, M. C., Brunswick
 Charles F. Branch, M. D., 69 Gamage Ave., Auburn
 Dean Fisher, M. D., State House, Augusta

Committee to Supervise Nurses' Attendants

Clyde I. Swett, M. D., Island Falls, *Chairman*
 Foster C. Small, M. D., 169 High St., Belfast
 Currier C. Weymouth, M. D., 83 Main St., Farmington
 W. Mayo Payson, Portland, Clerk

Committee on Graduate Education

Joseph E. Porter, M. D., 22 Arsenal St., Portland, *Chairman*
 Charles F. Branch, M. D., 69 Gamage Ave., Auburn
 Lloyd Brown, M. D., 316 State St., Bangor
 Milan A. Chapin, M. D., 237 Turner St., Auburn
 William F. Mahaney, M. D., 338 Main St., Saco
 George L. Maltby, M. D., 203 State St., Portland
 Richard C. Wadsworth, M. D., 489 State St., Bangor

**M. M. A. Representative on the Maine Committee of the
 American Academy of Pediatric's Committee on
 Fetus and Newborn**

Henry C. Thacher, M. D., 11 Turner St., Auburn

Committee on Social Hygiene

Oscar R. Johnson, M. D., 18 Deering St., Portland, *Chairman*
 Donald L. Anderson, M. D., 54 Pine St., Lewiston
 Carl E. Blaisdell, M. D., 42 Broadway, Bangor

Committee on Industrial Health

Frank W. Barden, M. D., Saco-Lowell Shops, Biddeford,
Chairman
 William A. Monkhouse, M. D., 131 State St., Portland
 Albert A. Darche, M. D., 782 Main St., Westbrook
 Ernest T. Young, M. D., Millinocket
 Albert P. Royal, M. D., 82 Maine Ave., Rumford
 Albert C. Todd, M. D., 410 South Main St., Brewer

Medical School for Maine Committee

Foster C. Small, M. D., 169 High St., Belfast, *Chairman*
 Frederick T. Hill, M. D., 177 Main St., Waterville
 Donald F. Marshall, M. D., 142 High St., Portland
 Forrest B. Ames, M. D., 255 Hammond St., Bangor
 Stephen A. Cobb, M. D., 28 Winter St., Sanford
 William Holt, M. D., 14 Deering St., Portland
 Ralph A. Goodwin, M. D., 56 Denison St., Auburn

HOSPITAL STAFF MEETINGS**Open to the Profession**

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital	2nd Thursday
	Notre Dame Hospital	2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General	2nd Thursday
	St. Mary's General	2nd Monday
Portland	Maine Eye and Ear Infirmary	1st Tuesday
	Maine General	2nd Friday
	Mercy	4th Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Monday
Waterville	Sisters	2nd Tuesday
	Thayer	Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.

COMMITTEE REPORTS*

Committee on Blood Transfusions

To the Officers and Members of the Maine Medical Association:

During the year 1951-1952 the activity of the Transfusion Committee has been limited, for the most part, to two fields of endeavor, viz. aid in the development of the American Red Cross Bloodmobile Unit for the collection of blood to be converted into plasma for the armed forces, and aid in an advisory capacity to the Office of Civilian Defense.

On June 21, 1951, the Medical Director of the Eastern Division of the American Red Cross was notified that the House of Delegates of the Maine Medical Association approved the proposal of the A. R. C. to establish a blood procurement program for both the Armed Forces and the civilian needs of this state. On July 2, 1951, a letter from the A. R. C. Medical Director stated that, with the deepest regret, the A. R. C. would be unable to provide any expansion of the Blood Program which would entail building and equipping of an additional center during the year July, 1951-July, 1952.

In October, 1951, because of a state-wide desire for an opportunity to give blood for the Armed Forces in Korea, an offer was made to collect blood in Maine for this purpose and to ship the blood to the Massachusetts Red Cross Blood Bank. Because of innumerable complications this plan was turned down by the A. R. C. In November, 1951, representatives of the A. R. C. met in Bangor with members of the Committee on Blood Transfusions to discuss the possibility of establishing a Bloodmobile Unit in Maine for the sole purpose of collecting blood to be converted into plasma for the Armed Forces. It was the unanimous opinion of the committee members present that this plan should be supported. Because of the need of immediate action it was felt inadvisable to await the next meeting of the House of Delegates in April. The President of the Maine Medical Association was consulted and was informed of the opinion of the Committee on Transfusions. The President, Dr. Jameson, then contacted the members of the Council who gave their consent to the establishment of this program. This approval was granted on November 20, 1951.

The actual program of collecting blood started in Bangor in March, 1952, and has continued to operate throughout the state with much appreciated aid from the physicians in many of the Maine communities. The program is financed by the National Red Cross and the Maine Red Cross Chapters. The Committee on Blood Transfusions desires to ask for the continued support of this program by the members of this association and requests that this committee be notified of any criticisms that arise concerning the operation of the program. It is our responsibility to support the program and to offer constructive criticism whenever possible.

The second endeavor of the committee, acting in an advisory capacity to the Office of Civilian Defense, has been primarily in regard to the establishment of a training program for phlebotomists, blood typists and specialists in the rehabilitation of expendable blood bank equipment. As part of this program a survey has been conducted by the Maine Association of Medical Technologists and Technicians to collect a rostra of all trained technicians, employed or retired, now residing in this state. It is recommended that training sites be established at the Maine General Hospital in Portland, the Eastern Maine General Hospital in Bangor, the Central Maine General Hospital in Lewiston, the Mercy Hospital in Portland, the Sisters' Hospital in Waterville, the Thayer Hospital in Waterville, and the Presque Isle General Hospital in Presque Isle. Approximately 1500 units of liquid plasma have been prepared in this state for an emergency stock-pile and negotiations are under way for the purchase of approximately 400 units of dried plasma to be strategically distributed and held for emergency use in case of disaster.

* Presented at the Annual Session of the House of Delegates, June, 1952.

We regret the resignation of Dr. Gilbert Clapperton of Lewiston from this Committee. He has contributed considerably to its accomplishments.

Respectfully submitted,

RICHARD C. WADSWORTH, M. D.,
Chairman,

JOSEPH E. PORTER, M. D.,
JOHN F. REYNOLDS, M. D.,
GERALD H. DONAHUE, M. D.

Tuberculosis Committee

Mr. President and Members of the Maine Medical Association:

Your Tuberculosis Committee met early in the year at the Central Maine Sanatorium in Fairfield and discussed the overall tuberculosis conditions in the state. Throughout the year we have attempted to keep certain men interested in the various health organizations in Maine. Several of our members have spoken at medical meetings, nurses' organizations and lay organizations. Of recent date the union of all health organizations, stimulated by Dr. Dean Fisher (Director of Health), united with the idea of a more definite attack on the problem. Dr. Fisher called a meeting of the several organizations at the Sanatorium during which time we discussed and thoroughly agreed with his plan. Dr. Fisher's suggested program for such an action seemed very reasonable and if and when carried out I am sure will be a great advancement towards solving our problems. It becomes exceedingly necessary to discover active tuberculosis early if we are to utilize the antibiotics that are effective in this disease, not only streptomycin but the newer isonicotinic derivatives.

GEORGE E. YOUNG, M. D.,
Chairman.

Report of Acting Secretary-Treasurer*

To the Officers and Members of the Maine Medical Association:

My principle concern during the past year has been with the financial side of the Association's business — particularly as it concerns the JOURNAL. You, who were here a year ago will recall that the House of Delegates requested that the Council continue its costs analysis of the JOURNAL. This has been done by means of a monthly breakdown of JOURNAL Income and Expenditures, presented at each meeting of the Council. In addition to this your Editor, Dr. Drake, and I have learned a good bit about printing costs and problems. Among other things we found that a 50 pound paper, which had been suggested, is not practical from any standpoint. What we saved on paper we paid out in increased labor cost — and the result was a JOURNAL that we just weren't proud of. Consequently, we shifted back to a 60 pound paper, which is the standard for this type of publication. We have also learned that the only way to break even would be on a basis of sixty pages of advertising to forty reading pages. We have run a total of 748 pages during the past twelve months; 368 advertising and 380 reading, at an overall cost of \$9,836.07 (I say overall, but please understand that this figure does not include any portion of salaries, rent or lights, inasmuch as these items have never been added to JOURNAL costs). Receipts allocated to the JOURNAL, including \$2.00 from each members dues, subscriptions and advertising totals \$9,574.76, which means that the JOURNAL cost the Association \$261.31. But, what really tells the story, is that the

approximate cost per page for printing and illustrative plates is \$12.71 against \$13.31 a year ago; per issue \$791.88 against \$927.74. Overall—\$13.15 against \$13.78—Per issue \$819.67 against \$960.33. *Those are the figures that count.*

While on the subject of the JOURNAL, I want to mention briefly that Mr. Payson (pinchhitting for Dr. Drake) and I attended a State Journal Conference at A. M. A. headquarters in Chicago, last November, and learned there that all State Journals are confronted with problems similar to our own.

The books of the Association and JOURNAL were closed and audited as of May 31, 1952, by Joseph Stillman, Certified Public Accountant, Portland, who states that, "I have examined the accounting records of the Maine Medical Association for the fiscal year ended May 31, 1952, and all related data and information pertinent thereto. I have found the records to be in order and all funds properly accounted for." The Auditor further states that the "Exhibits, Balance Sheet and Statement of Income and Expense, with supporting Schedules (which appear at the end of this report), present the true financial condition of the Maine Medical Association as of May 31, 1952, and the results of its operation for the fiscal year then ended."

As of January 1st we re-arranged the system of book-keeping, allocating columns solely for JOURNAL Income and Expenses, which gives a clear picture of these items and

* Presented at the Annual Session of the House of Delegates of the Maine Medical Association, June, 1952.

which the Auditor feels is a satisfactory set-up. We have added to our files an Investments Record Book.

The Association has 769 members, which includes 647 Active, 1 Junior, 7 Affiliate, 52 Senior, 50 Honorary and 12 in Military Service. We have lost eighteen members by death this year, 6 have moved out of the State, and there are 6 unpaid. Twenty-five new names have been added to our roster during the year.

I have had the privilege of attending three county meetings, Piscataquis, Knox and Aroostook, and I would like to say here that I am fully convinced that the Secretary of your Association should visit each county society at least once a year to assure the coöperation that should exist between the County and State organizations. It is so much easier to talk things out than to write them out.

I also attended the House of Delegates meeting of the Connecticut State Medical Society, which is a one-day session, called to order at 10.00 A. M., with intermission for lunch from 1.00 to 2.00 P. M., then back to business. I am going to let Dr. Thomas Martin tell you about that meeting. He was there as your delegate.

We have made a concerted effort in the Association's office to carry on the work of the Association to the best interests of all concerned. I want to thank the County Secretaries and the Association's Officers for their coöperation during the year. In closing, I would like particularly to thank Dr. Drake for his patience and fortitude so far as the JOURNAL is concerned.

Auditor's Report

EXHIBIT A

Maine Medical Association Balance Sheet As At May 31, 1952

ASSETS

Cash in Banks (See Schedule III)	\$18,207.39
Accounts Receivables:	
Dues	\$528.00
Membership JOURNAL Subscriptions	32.00
Miscellaneous JOURNAL Subscriptions	13.80
Advertising — JOURNAL	699.29
	<hr/>
	1,273.09
Securities (See Schedule VIII)	17,069.83
Furnishings and Equipment	1,092.59
Accrued Interest Receivable	202.91
Prepaid Expenses:	
Annual Session	\$70.19
Postage and Mailing	18.08
	<hr/>
	88.27
Trust Fund Investments (See Schedule II)	3,499.27
	<hr/>
Total Assets	\$41,433.35

LIABILITIES

Accounts Payables	\$1,018.01
Due for Social Security and Withholding	135.30
Deferred Income:	
Convention Exhibit Space	\$1,350.00
Maine Tuberculosis Association for Speaker at Annual Session	100.00
	<hr/>
	1,450.00
Total Liabilities	2,603.31
	<hr/>
Excess of Assets over Liabilities	\$38,830.04

CAPITAL AND FUNDS

Capital Account (See Schedule I)	\$35,330.77
Trust Funds (See Schedule II)	3,499.27
	<hr/>
Total Capital and Funds	\$38,830.04

EXHIBIT B
Statement of Income and Expense
For One Year Ended May 31, 1952

INCOME	
Dues	\$21,420.50
JOURNAL (See Schedule IV)	9,574.76
Annual Session (Exhibits)	2,143.00
Investments (See Schedule V)	1,062.91
American Medical Association for Collection of Dues	97.05
Executive Secretary's Office — Maine Plan	11.00
Total Income	<u>\$34,309.22</u>
EXPENSE	
Executive Secretary's Office (See Schedule VI)	\$11,206.80
Secretary-Treasurer's Office (See Schedule VII)	5,462.18
JOURNAL (See Schedule IV)	9,836.07
General:	
Annual Session	\$1,679.76
President's Expense	425.00
Councilor's Expenses	506.55
Legal Advisory Committee	1,000.00
Special Committees	175.55
Delegates — New England Medical Societies	225.79
Delegates — American Medical Association	218.86
President's Certificates	126.50
Clinical Sessions	203.38
New England Council Dues	100.00
House of Delegates	68.97
	<u>4,730.36</u>
Total Expenses	<u>31,235.41</u>
Net Income for the Period	<u><u>\$3,073.81</u></u>

SCHEDULE I
Capital Account
For the Year Ended May 31, 1952

Balance, June 1, 1952	\$32,415.30
Additions to Capital:	
Net Income for the year ended May 31, 1952 (Exhibit B)	\$3,073.81
Interest on Bonds for prior years not previously recorded	116.66
	<u>3,190.47</u>
Total	<u>\$35,605.77</u>
Deductions from Capital:	
American Medical Association dues collected in May, 1951, but not remitted to the American Medical Association until June, 1951. This amount should have been \$325.00 but only \$50.00 was picked up at the close of the fiscal year 1950-1951	275.00
Balance, May 31, 1952, Exhibit A	<u><u>\$35,330.77</u></u>

SCHEDULE II
Trust Funds and Trust Fund Investments
May 31, 1952

TRUST FUND INVESTMENTS	
Prince A. Morrow Trust:	
36 Shares American Agricultural Chemical Co. (Cost)	\$ 348.00
Canal National Bank Savings Book No. 3905:	
Balance, June 1, 1951	\$1,714.73
Add: Dividends Received	162.00
Interest on Savings	25.74
	<u>1,902.47</u>
	<u><u>\$2,250.47</u></u>

Thayer Library Trust:

Canal National Bank Savings Book No. 3903:

Balance, June 1, 1951	\$1,227.75	
Add: Interest on Savings	21.05	
		<u>1,248.80</u>

Total Trust Fund Investments		<u>\$3,499.27</u>
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TRUST FUNDS

Prince A. Morrow Fund:

Principal	\$ 554.94	
Income	1,695.53	
		<u>\$2,250.47</u>

Thayer Library Fund:

Principal	\$1,154.20	
Income	94.60	
		<u>1,248.80</u>

Total Trust Funds		<u>\$3,499.27</u>
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SCHEDULE III

**Schedule of Cash Receipts and Disbursements
For the Year Ended May 31, 1952**

Balance, Cash in Banks, June 1, 1951	\$22,544.85
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Cash Received From:

State Dues	\$21,662.50
JOURNAL Subscriptions and Sales	1,302.80
JOURNAL Advertising	8,223.92
Exhibit Space Rentals	2,263.00
Investments	1,719.87
Miscellaneous (Refunds, transfers, etc.)	733.41
Employees for Social Security and Withholding Taxes	1,809.38
Members for American Medical Association Dues	11,675.00
	<u>49,389.88</u>

Total Cash Received	<u>49,389.88</u>
---------------------------	------------------

Total	<u>\$71,934.73</u>
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Cash Disbursements:

Executive Secretary's Office:

Salaries	\$9,123.08
Travel Expense	407.03
Office Expense	1,377.69
	<u>\$10,907.80</u>

Secretary-Treasurer's Office:

Salaries	\$3,846.12
Travel Expense	62.50
Office Expense	1,319.58
	<u>5,228.20</u>

Social Security and Withholding Taxes	2,192.65
JOURNAL Expense (Printing, Travel — Office)	10,224.24

General Expenses:

Annual Session	\$1,676.77
Legal Advisory Committee	1,000.00
President's Expense	425.00
Miscellaneous (Committees, Councilors, Delegates, Clinical Sessions, etc.)	1,702.44
	<u>4,804.21</u>

American Medical Association, for Members' Dues	12,000.00
Purchase of Securities	8,015.24
Miscellaneous (Refunds, Transfers, etc.)	355.00

Total Cash Disbursements	<u>53,727.34</u>
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Balance, Cash in Banks, May 31, 1952	<u>\$18,207.39</u>
--------------------------------------------	--------------------

Canal Bank — Checking Accounts	\$16,360.48
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Canal Bank — Special Checking Account for American Medical Association Dues	321.80
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Maine Savings Bank	1,525.11
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	<u>\$18,207.39</u>
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SCHEDULE IV

Schedule of Journal Income and Expense
For the Year Ended May 31, 1952

INCOME

Subscriptions and Sales of JOURNAL		\$1,348.10
Advertising :		
State Journal Advertising Bureau	\$7,271.08	
Local Advertising	955.58	
		<u>8,226.66</u>
Total Income from JOURNAL		<u>\$9,574.76</u>

EXPENSE

Printing and Plates		\$9,502.62
Travel		32.21
Stationery and Supplies		156.29
Postage and Mailing		107.41
Telephone		17.59
Miscellaneous		19.95
		<u>9,836.07</u>
Total Expenses of JOURNAL		<u>\$9,836.07</u>

NOTE: Above items of expense do not include any portion of salaries of Secretary-Treasurer, rent and lights since no part of these expenses have been allocated specifically to the JOURNAL.

SCHEDULE V

Schedule of Income From Investments
For the Year Ended May 31, 1952

Income From :		
Interest :		
United States Government Bonds, Series "G"	\$150.00	
Portland Terminal Company Bonds	150.00	
Province of New Brunswick Bonds	15.00	
Province of Nova Scotia Bonds	12.50	
Bangor & Aroostook Bonds	12.87	
Jacksonville Gas Corporation Bonds	2.67	
Savings Bank Accounts :		
Maine Savings	\$70.72	
Portland Savings	31.76	
Canal National Bank	12.02	
First National Granite	3.82	
		<u>118.32</u>
		\$ 461.36
Dividends :		
Central Maine Power Co.—Preferred	\$10.50	
Consolidated Edison Co. of New York—Preferred	12.50	
Telfair Stockton Company Inc.—Common	16.00	
Chase National Bank	10.00	
		<u>49.00</u>
Other :		
Interest and Distribution in Liquidation :		
Prudence—Bond Corporation		552.55
		<u>552.55</u>
Total Income from Investments		<u>\$1,062.91</u>

SCHEDULE VI

Schedule of Executive Secretary's Office Expenses
For the Year Ended May 31, 1952

Salaries :		
Executive Secretary	\$7,000.00	
Stenographer	2,200.00	
		<u>\$9,200.00</u>
Travel Expense :		
County Societies	\$154.10	
American Medical Association Meetings	89.33	
Other Council and Committee Meetings and Conferences	279.70	
		<u>523.13</u>
National Education Campaign		10.00

Office Expenses :	
Rent and Lights	\$458.15
Stationery, Supplies and Postage	538.43
Telephone	309.35
Social Security Taxes	87.00
Subscriptions, Books and Periodicals	60.74
Miscellaneous	20.00
	<hr/> 1,473.67
Total Expenses	<hr/> \$11,206.80

SCHEDULE VII

Schedule of Secretary-Treasurer's Office Expenses
For the Year Ended May 31, 1952

Salaries :	
Secretary-Treasurer	\$ 346.12
Acting Secretary-Treasurer	3,500.00
	<hr/> \$3,846.12
Travel Expense	55.50
Office Expenses :	
Rent and Lights	\$458.15
Stationery and Supplies	311.62
Postage	103.25
Telephone	234.25
Auditing	182.18
Social Security Taxes	65.87
Advertising	30.00
Subscriptions Books and Periodicals	15.00
Miscellaneous	160.24
	<hr/> 1,560.56
Total Expense	<hr/> \$5,462.18

SCHEDULE VIII

Schedule of Securities
May 31, 1952

	Face	Cost
Bonds (Cost) :		
United States Government Bonds, Series "G", due July 1, 1956	\$4,000.00	\$ 4,000.00
United States Government Bonds, Series "G", due March 1, 1961	2,000.00	2,000.00
Portland Terminal Company, 5% First Mortgage Bonds, 1961	3,000.00	3,045.00
Province of New Brunswick, 4½% Sinking Fund Bonds, 1970	1,000.00	981.20
Province of Nova Scotia, 3¾% Bonds, 1971	1,000.00	995.00
Bangor & Aroostook, 4½% First Mortgage Bonds, 1976	1,000.00	860.00
Jacksonville Gas Corporation, 4% First Mortgage Bonds, 1969	1,000.00	1,025.00
Stocks :		
12 Shares Central Maine Power Co., 3½% Preferred, \$100 par		948.00
10 Shares Consolidated Edison Co. of New York, Inc., \$5 Cumulative Preferred, no par		1,090.00
25 Shares Chase National Bank		1,040.63
20 Shares The First National Bank of Boston		1,025.00
20 Shares Telfair Stockton & Company, Inc., Common, \$4.00 par		60.00
2 Shares Prudence — Bond Corporation		0.00
Total Securities		<hr/> \$17,069.83

Pilonidal Sinus—Continued from page 242

3. Shute, F. C., Jr., Smith, T. E., Levine, M., and Burch, J. C.: Pilonidal Cysts and Sinuses, Ann. Surg., 118:706-716, 1943.

4. Pope, C. E.: New and Successful Closed Operative Procedure for Pilonidal Sinus, Arch. Surg., 52:701, 1946.

5. Holman, E.: Pilonidal Sinus — Treatment by Primary Closure, S. G. & O., 83:94-100, 1946.

6. Ziegler, H. R., Murphy, D. R., Jr., Meek, E. M.: Pilonidal Cyst and Sinus: New Method of Excision with Primary Closure, Surgery, 20:690, 1946.

7. Whipple, A. C., and Elliott, R. H. E., Jr.: The Repair of Abdominal Incisions, Ann. Surg., 108:741, 1938.

8. Babcock, W. W.: A Textbook of Surgery, W. B. Saunders Company, 1928, p. 606.

Report on Arthritis Program—Continued from page 246

Laboratory Data: Sedimentation rate 106. Urin-lysis negative. WBC. normal. Fasting blood sugar, erum chlorides, and electrocardiogram were normal.

X-ray Data: There was slight generalized osteo-rosis and narrowing of the intercarpal osseous paces plus narrowing of tarsal and hip joints.

Hospital Course: During the first week an inter-mittent fever accompanied the arthritic manifesta-tions. The diagnosis of rheumatoid arthritis appeared to be justified. Initial therapy consisted of bed rest, alicylates, physiotherapy and good nutrition. In October, 1950, the patient was started on intramus-ular ACTH therapy which was maintained for 4 weeks after which the patient received Cortisone. During the brief interval between cessation of ACTH and institution of Cortisone treatment a mild flareup of symptoms occurred. Improvement was dramatic prior to that and was maintained after institution of Cortisone treatment. The dosage of the latter drug was gradually reduced to 100 mg. weekly and the patient was discharged in February, 1951, on that dosage. During the latter part of his hospitalization casts and traction were utilized for correction of ad-ductor spasm in the left leg and good results were obtained. Prior to discharge the patient was inter-viewed by the Vocational Rehabilitation Service and tentative arrangements made for vocational training at home. Since discharge the patient has returned at three-month intervals for follow-up examination. In the fall of 1951 the weekly dose of Cortisone was stopped. Within three weeks the patient suffered an acute exacerbation of his arthritic process and once again required hospitalization and reinstitution of Cortisone therapy. At present the patient is active about his home and taking 100 mg. of Cortisone orally every 4 days. Sedimentation rate is 15 mm. per hour at present.

Comment: This case is of particular interest to us since he is the first patient with rheumatoid arthritis treated in this hospital with ACTH and Cortisone. The unusually low maintenance dose of Cortisone that he requires is cited as a matter of interest as well. His physical status has changed from that of a bed-ridden individual to that of an essentially well per-son. Although moderate residual deformities persist,

the patient should be able to return to light work in the near future.

SUMMARY AND CONCLUSIONS

A program for the diagnosis, treatment, and fol-low-up evaluation of arthritic patients at this hospital has been described. This program emphasizes team work and brings to each patient the combined pro-fessional ability, interest, and enthusiasms of several medical and surgical specialties. Advantages of older, well-accepted methods of treatment plus those of the latest therapeutic advances are incorporated in this plan, which stresses an active approach to the prevention of crippling deformities. We have the hope that in practically all patients careful observa-tion and watching for early deformities, plus institu-tion of prompt and vigorous treatment, will prevent these unfortunate residual complications. Such a program may make the difference between whether one is left with a patient who is crippled or one who, when the active disease process has subsided, still retains a maximum of useful anatomical function. As a result of this integrated approach, arthritic patients may be returned to their homes and to economic use-fulness more quickly, and full advantage is taken of spontaneous remissions that may occur. Two case reports are cited to illustrate the therapeutic facilities and methods employed.

BIBLIOGRAPHY

1. Steinbrocker, O., Traeger, C. H., Batterman, R. C.: Therapeutic Criteria in Rheumatoid Arthritis. *J. A. M. A.*, Vol. 140, 659-662 (June 25), 1949.
2. Giansiracusa, J. E., Ropes, M. W., Kulka, J. P., and Bauer, W.: The Natural Course of Rheumatoid Arthritis and the Changes Induced by ACTH. *The American Journal of Medicine*, Vol. X, 419-438 (April), 1951.
3. Query, Richard Z.: Rheumatoid Spondylitis. *J. A. M. A.*, Vol. 139, 692-698 (March 12), 1949.
4. Norcross, B. M., Robins, H. M., Lockie, L. M.: D-To-bocurarine in Oil—Wax-Suspension in Rheumatoid Spon-dylitis. *J. A. M. A.*, Vol. 140, 397-40 (May 28), 1949.
5. Rosenberg, E. F., Bishop, L. F., Weintraub, H. J., and Hench, P. S.: Cardiac Lesions in Rheumatoid Arthritis. *Archives Internal Medicine*, Vol. 85, 751-764 (May), 1950.

Appointed To AMA PR Advisory Committee

By action of the Board of Trustees, two new mem-bers have been added to the advisory committee to the AMA's Director of Public Relations. This com-mittee is composed of executive secretaries and pub-lic relations directors of state medical societies. The two newly-appointed members are Ed. L. Bridges, Public Service Director, Tennessee State Medical

Association, and Lester H. Perry, Executive Secre-tary, Pennsylvania State Medical Society. Other members of the committee are Harvey Sethman, Colorado; John Hunton, California; Hugh Brenne-man, Michigan; Charles Nelson, Ohio; Charles Crownhart, Wisconsin; Richard Graham, Okla-homa; and Fred Miebach, New York. Members are appointed for terms of three years.

COUNTY SOCIETIES

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COUNTY SOCIETY NOTES

? ? ? ?



It has long been a minor Comedy of Errors in the Association that Dr. Jameson (C. Harold) and Dr. Belknap (Robert W.) are often mistaken one for the other. They deny the resemblance probably from a sense of chagrin at being taken for a less handsome man than each fondly fancies himself. At times, even, women have been known to reveal confidences not intended for the ears addressed to their great embarrassment. To put an end to this foolishness their portraits are here reproduced in juxtaposition so that all can see how vague this alleged resemblance really is. For example: It can be seen that Dr. Jameson (right) is nearly a third of a head taller than Belknap (left).

Cumberland

A meeting of the Cumberland County Medical Society was held at the Maine General Hospital, Portland, Maine, on June 19, 1952.

An interesting and instructive clinic was prepared by the Staff of the Hospital and presented at 6.45 P. M., preceding the dinner.

After dinner, the meeting was called to order by President Thomas A. Martin and the minutes of the last meeting were read and approved. Dr. G. E. C. Logan reported for the committee which was appointed to investigate the mass chest survey program proposed by the United States Public Health Department and the entire report incorporated in the record. The Society voted to accept the committee's report.

Dr. Horace K. Sowles read resolutions on Dr. Frank A. Smith who died January 14, 1952. It was voted that these resolutions be spread upon the records of the Society and that a copy be sent to the family.

Dr. William A. Ventiniglia of Portland, entertained the membership with an interesting and instructive talk on some of his experiences on the front line in Korea. His talk was illustrated with colored lantern slides.

RALF MARTIN, M. D.,
Secretary.

Lincoln - Sagadahoc

A regular monthly meeting of the Lincoln-Sagadahoc County Medical Society was held at the Sedgwick Hotel in Bath, May 20, 1952. There were twenty members, the

speaker, Dr. Edward Schulman, and Dr. C. Harold Jameson, President of the Maine Medical Association, present.

A note of appreciation for the bouquet that had been sent to the funeral services for the late Dr. Edwin F. Pratt, from Mrs. Pratt and Miss Louise Pratt, was read.

It was voted to dispense with monthly meetings until September, except for a social meeting during July or August; the date to be announced by Dr. Thomas E. Proctor or Dr. A. A. Nichols.

Dr. Sidney C. Dalrymple's resignation was accepted. Dr. Dalrymple expressed his appreciation for the courtesy of the Society in maintaining his membership during his years of active duty in the Navy. He is soon to be released to inactive duty and does not plan to again enter the practice of medicine.

Dr. Schulman of the New England Center Hospital in Boston, gave a down to earth discussion on Recent Advances in the Use of Antibiotics.

M. W. WESTERMEYER, M. D.,
Secretary.

Oxford

The semi-annual meeting of the Oxford County Medical Society was held at Bethel Inn on Wednesday, June 18, 1952. There were fifty members and guests present.

Dr. Francis J. Kadi of Greenwood Mountain and Dr. Harry L. Harper of South Paris, was elected to membership.

At the Scientific Session, Dr. John James, Obstetrician at the Central Maine General Hospital, Lewiston, spoke on The Management of Occiput Posterior in Labor.

D. E. ELSEMORE, M. D.,
Secretary.

Washington

A regular meeting of the Washington County Medical Society was held on Friday, June 20, 1952, at the St. Croix Country Club. There were sixteen members and guests present.

After an excellent lobster dinner, Dr. Oscar F. Larson of Machias, introduced Dr. J. A. Caskey of St. John, N. B., assistant roentgenologist of St. John General Hospital. Dr.

Caskey spoke in a very able manner on various aspects of the treatment of cancer by X-ray. He said that in cancer of the breast some types called for radical mastectomy but that many would benefit more by a simple mastectomy followed by X-ray therapy. His talk provoked a very active discussion by all members present.

Dr. Karl V. Larson of East Machias, was nominated as candidate for Councilor for Hancock and Washington Counties with Dr. John Metcalf of Calais, alternate.

The Woman's Auxiliary of the Washington County Medical Society met at the same time and had an active business meeting and discussion.

KARL V. LARSON, M. D.,
Secretary.

New Members

Kennebec

Alta Ashley, M. D., State House, Augusta, Maine.

Donald Drew, M. D., Rhode Island General Hospital, Providence, R. I.

Oxford

Harry L. Harper, M. D., South Paris, Maine.

Francis J. Kadi, M. D., Greenwood Mt., Maine.

Penobscot

Philip T. Sorenson, M. D., State Hospital, Bangor, Maine.

Washington

John F. Hanson, M. D., Machias, Maine.

Change of Address

Cumberland

William A. Ventimiglia, M. D.

From: Casual Personnel Section, A.P.O., 613, c/o P.M.,
San Francisco, Cal.

To: 22 Deering St., Portland, Maine.

NECROLOGY

Waldron L. Morse, M. D.

1908 - 1952

Waldron Lewis Morse, M. D., died May 8, 1952. He was born at Canton, Maine, May 19, 1908. He was the son of Dr. Frank Waldron and Amorilla Spaulding Morse. He was a graduate of Bowdoin College in 1929, and Yale University School of Medicine in 1933.

He served two years as interne at the Hartford Hospital in Hartford, Conn., where he was house surgeon. He had further training at The Lenox Hill Hospital in New York City, the Griffin Hospital in Derby, Conn., and the Walter Reed Hospital in Washington, D. C. He had served in the capacity of physician with the world famous International Grenfell Association in Newfoundland.

For three years Dr. Morse was a lieutenant in the army. In 1938 he went to Springvale, Maine, where he practiced medicine and surgery.

He was a member of the Chi Psi Fraternity; the Phi Chi Medical Fraternity; the North Parish Congregational Church, Sanford; Sanford Lodge of Elks; and a Trustee of

Nasson College. He was a member of The Henrietta D. Goodall Hospital Staff; member and past president of The York County Medical Society; member of the Maine Medical Association; the American Medical Association; and a Diplomate of the National Board of Medical Examiners.

"He was a brilliant student of medicine and, above all, a cultivated gentleman. He exemplified the three ideals which carried Sir William Osler along through the years. The first, 'Do the day's work well and not bother about tomorrow'; the second, to 'Act the golden rule'; the third, 'To cultivate such a measure of equanimity as would enable him to bear success with humility, the affection of his friends with pride, and be ready, when the day of solemn grief comes, to meet it with courage befitting a man'."

He is survived by his widow, Mrs. Barbara (White) Morse; twin children, Sally Bramhall and Curtis Spaulding Morse; a sister, Mrs. Harry K. Foster, Fredonia New York; and an aunt, Mrs. Frederick F. Schaffer, Davenport, Florida.

NEWS AND NOTES

Hospitals Willing to Accept Polio Cases

The following hospitals have indicated willingness to accept polio cases:

- Augusta General Hospital (emergency base)
- Central Maine General Hospital
- Eastern Maine General Hospital
- Franklin County Memorial Hospital (diagnosis)
- Madigan Memorial Hospital
- Maine General Hospital
- Mercy Hospital (4 cases)
- Miles Memorial Hospital (First 24 hours only)
- Milliken Memorial Hospital
- Mount Desert Island Hospital (diagnosis only)
- Rumford Community Hospital (diagnosis only)
- Sisters' Hospital
- Thayer Hospital
- Webber Hospital

Additions to this list will be published in the near future, so a list of respirators, and hot pack machines.

Department of Health and Welfare
Division of Maternal and Child Health
(Including Services for Crippled Children)
Clinic Schedule — 1952

ORTHOPEDIC CLINICS

- Portland — Maine General Hospital, 9.00-11.00 a. m.: July 4, Aug. 11, Sept. 8, Oct. 13, Nov. 3, Dec. 8.
- Lewiston — Central Maine General Hospital, 9.00-11.00 m.: July 18, Aug. 15, Sept. 19, Oct. 17, Nov. 14, Dec. 12.
- Rumford — Community Hospital, 1.30-3.00 p. m.: Sept. 17, Dec. 17.
- Waterville — Thayer Hospital, 1.30-3.00 p. m.: Aug. 28, Oct. 23, Dec. 18.
- Rockland — Knox County Hospital, 1.30-3.00 p. m.: Aug. 1, Nov. 13.
- Machias — Normal School, 1.30-3.00 p. m.: Aug. 13, Oct. Dec. 10.
- Presque Isle — Northern Maine Sanatorium, 9.00-11.00 m.—1.00-3.00 p. m.: July 9, Sept. 9, Nov. 5.
- Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: July 8, Nov. 4.
- Fort Kent — Normal School, 10.00-1.00 p. m.: Sept. 10.
- Bangor — Eastern Maine General Hospital, 1.30-3.00 m.: July 24, Sept. 25, Nov. 20.

CARDIAC CLINICS

- Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.
- Bangor — Eastern Maine General Hospital, 9.00-11.00 m.: July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

HARD-OF-HEARING CLINICS

- Waterville — Thayer Hospital, 1.30-3.30 p. m.: Sept. 3, Dec. 3.

PEDIATRIC CLINICS

- Bangor — Eastern Maine General Hospital, 1.30 p. m.: July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.
- Waterville — Thayer Hospital, 1.30 p. m.: July 1, Aug. 5, Sept. 2, Oct. 7, Nov. 4, Dec. 2.
- Presque Isle — Northern Maine Sanatorium, 1.30 p. m.: July 23, Sept. 24, Nov. 19.

By Appointment Only

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For
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Today's
Dollars

The above is the theme of a treatise we will be pleased to send to you without obligation.

In later life we often look back and say to ourselves, "Wasn't that a lucky decision I made many years ago." It's at a time when one is too busy to think much of the future that these fundamental decisions should be made.

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Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director

Augusta General Hospital, Augusta, Maine, 1st Monday 9.00 A. M., Leon D. Herring, M. D., Director.

Bath Memorial Hospital, Bath, Maine, 2nd Tuesday, 3.00-5.00 P. M., Francis A. Winchenbach, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Waldo A. Clapp, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

Venereal Disease Clinics

The Department of Health and Welfare, Bureau of Health, maintains facilities for the diagnosis and treatment of venereal diseases in the following locations:

Augusta, Bangor, Bath, Belfast, Biddeford,
Lewiston, Portland, Rockland, Rumford,
Sanford, Waterville, Wilton and Winthrop.

Any physician wishing to refer an indigent person for diagnosis or treatment may obtain the name of the nearest clinic physician by contacting the Department of Health and Welfare, Bureau of Health, State House, Augusta, Maine. If no clinic facilities are available, physicians will be authorized to treat indigent patients in their offices. Authorization should be requested before treatment is started.

Physician Wanted at Augusta State Hospital

Wanted: Physician, graduate of A school, registered in State of Maine, for service at Augusta State Hospital. Hospital has excellent diagnostic and treatment facilities, good medical library. Salary dependent on amount of training in psychiatry. Beginning salary without psychiatric experience \$107.00 per week. Two weeks' annual vacation, sick leave, State retirement system. Apply to:

Dr. F. H. Sleeper, Supt.
Augusta State Hospital
Augusta, Maine

Physician Wanted at North Haven, Maine

The Selectmen of the Town of North Haven feel that they have an interesting offer to make a physician, who would enjoy living in a resort town on the coast of Maine and serving the people of the town as general practitioner.



The Journal of the Maine Medical Association

Volume Forty-Three

Portland, Maine, August, 1952

No. 8

ADDRESS OF A. M. A. PRESIDENT, JOHN W. CLINE, M. D.

To the House of Delegates, A. M. A., June 9, 1952

The past year has been busy and somewhat strenuous for your President. It has carried me to many states and all parts of the country.

It has been gratifying to observe the growing unity and increasing vigor of the profession. The degree varies in the different states but the trend is apparent everywhere.

The past year represents one of great achievement in medicine. There have been important additions to our scientific knowledge and we have learned to reduce farther the latent period between the establishment of scientific fact and its practical application in diagnosis and treatment. Rapid dissemination of information by means of meetings and publications and the increased coöperative effort by investigators in common and differing fields have contributed to this process. Scientific medicine now is coöordinated to a degree never previously attained.

Medical education at all levels — undergraduate, graduate and postgraduate — has continued to improve. Graduate education has suffered to some degree as a result of defense mobilization and we must plan now to provide opportunity for those in the Armed Forces to complete their training when returned to civilian life.

Perhaps the most significant advance is to be found in the field of postgraduate education. More planned postgraduate courses have been offered and, in some instances, these have been carried to the

physician in his home community. The attendance at meetings, which have been better organized and of high quality, has increased.

Medical care has increased in quantity as well as in standards. The American people enjoy more abundant and better medical care than ever before.

The ratio of physicians to population has increased and there is better distribution of doctors. Improved transportation, better facilities and greater use of auxiliary personnel have permitted the physician to make better use of his time and render better care to more people over a wider area.

The interest of medical students in general practice and in rural practice has been fostered by the medical schools, the state associations and the American Medical Association. These efforts coupled with the placement agencies of our state and national organizations and the increased assumption of responsibility by local communities for providing medical care, have resulted in placing many physicians in areas in need of their services.

Until comparatively recently inducing physicians to locate in places needing them was considered to be solely the responsibility of the profession. It now has been demonstrated that young, well trained physicians will go readily to communities in which they are able to practice medicine of the high quality learned during their medical school and hospital years. They will remain if the community will avail

itself of their services throughout the year and if living conditions and educational facilities are adequate to provide satisfactory surroundings in which to raise a family.

There are abundant examples of success in obtaining and holding physicians when the community undertakes its portion of the burden of improving the facilities for practice and providing adequate educational opportunities for children. These serve to focus attention upon certain essential aspects of community life.

Plans for protection against the costs of illness have grown and improved during the past year. More than 85,000,000 Americans now have Blue Cross or other hospital coverage, 65,000,000 have surgical and 28,000,000 medical and surgical protection.

During the year, additional millions of Americans have enrolled in these programs, demonstrating that American problems can be solved by American methods and far more successfully than by resorting to government for a partial solution restricted within the rigid framework of legislation.

The multiplicity and elasticity of our plans stimulates experimentation and encourages the orderly process of evolution. This ultimately will provide us with a plan or plans which will be generally recognized as the most nearly ideal for our people.

The plans for prepayment have undergone considerable development in the past year. Coverage against economically catastrophic illness has become more general. Individual coverage is more available and experiments in covering the aged are under way. The rural population has wider protection. More must and will be done in these areas as time passes. Gaps have existed and some still exist but these are being closed.

Over the country one finds variation in the interest of the profession and the backing it gives to the voluntary insurance program. On the whole it is good and is improving.

The voluntary plans fill a great need and render a great service to our people. On this basis alone they deserve our full support. Unquestionably they are far from perfect and defects exist in some plans. Where changes are needed let us strive to bring them about in a constructive fashion.

Destructive criticism and withholding support and coöperation interfere with proper development and damage the entire program. Injury to the voluntary movement would jeopardize our future freedom.

Opinion is almost unanimous that a strong and successful voluntary insurance program is our greatest bulwark against the socialization of medicine. This opinion is held by many of our friends in other fields of endeavor and in public life. It is shared

by those who would destroy the high standards of American medicine by placing it under bureaucratic domination. Some of these belittle the accomplishments of the program and some have tried to interfere with its development because they realize that it stands as a barrier against the accomplishment of political medicine.

We have recognized and accepted our responsibilities to provide the American people with medical care of continuously improving quality and to make that care more easily available to all. We must continue our efforts.

On the other hand, there is also growing recognition of a coexistent responsibility on the part of the public. It has been said that the plans for extension of medical care are solely the responsibility of the medical profession. It is essential that the public, the plans and the hospitals assume their portions of the burden. The provision of medical care is not a one-way street and others must meet their obligations as well.

In the course of twenty years of dealing with medical problems on the local, state and national planes, I have watched these problems multiply and become more complex at all levels. As medical care and health have become more prominent in the minds of the people this change has been inevitable. As public interest has increased in these matters, we have come more closely under public scrutiny. As medical affairs have become more important our relations with other groups have become more important and the operations of the American Medical Association have become more important.

These activities have been strengthened in many ways. A large number of individuals have been responsible. They are too numerous even to mention at this time although I have drawn attention to some of their activities during the year through the medium of the President's Page. The headquarters staff consists of almost nine hundred loyal, hard working employees distributed in twenty departments. With the exception of the purely organizational departments, all are working full time directly or indirectly in the public interest.

I cannot allow this opportunity to pass without paying my respects to our calm, efficient and extremely able secretary and general manager, Dr. Lull, and to his very capable, energetic and loyal assistant, Dr. Howard, who direct the staff. During the past year numerous changes have been made in the interests of more efficient operations.

The quality of *The Journal* has continued to improve under the admirable direction of the editor, Dr. Austin Smith. In my travels about the country I have heard many compliments, few criticisms of *The Journal* and almost unanimous approval of the

changes he has instituted. *J. A. M. A.* has increasingly justified its reputation as the most highly respected and most widely read medical journal in the world.

The Board of Trustees is composed of fine, sincere and able men who labor arduously and with serious purposes dealing with the many matters demanding their attention. As the problems of medicine have multiplied the agendas have increased in length. It is only by close application to its work, under the capable and efficient direction of its splendid and devoted chairman, Dr. Murray, that it is able to perform the many tasks assigned to it. I wish to express my deep appreciation to the Board and its chairman for the excellent record of accomplishment of the past year.

To you, the members of the House of Delegates, I wish to express my compliments and my appreciation of the character of your deliberations. In your meetings you have considered and debated many matters. The serious responsibility of determining the basic policies of American medicine is yours. The decisions you make and the methods of expressing them are of great importance. The thought, diligence and care you have devoted to your transactions have clarified the position of medicine and have built well for the profession.

During the past year more attention has been paid to the relationship of medicine to other professions. The association with other groups concerned with the care of the sick has become closer. Problems still exist in certain areas of contact but progress has been made and is being made in dealing with them. Some will require long periods for complete solution.

No problem is too difficult to solve if patient men of good will approach it in a spirit of coöperation. An excellent example is the successful conclusion of the negotiations in the establishment of the Joint Commission on Hospital Accreditation.

The medical profession and the hospitals are interdependent. What affects one affects the other. There is growing concern over mounting hospital costs and the hospitals have been unduly criticized because of them. We can do much to dispel misconceptions by explaining to our patients the reasons for this situation. About 65 per cent of hospital costs are attributable to salaries and wages. As scales of compensation have risen, costs have risen correspondingly. In addition every item which the hospital must purchase is more expensive due to the spiral of inflation which involves our entire economy.

On the other hand, certain hospitals continue to engage in the practice of medicine in defiance of established principles and in contravention of the law in most states. There is, I believe, widening recognition by hospitals that the practice of medicine is

the practice of medicine whether performed within or without the hospital. We recognize the right and the necessity for hospitals to derive income from certain departments staffed by physicians and ethical arrangements have been worked out whereby the rights of all concerned are respected. The hospital must not become dominant in the practice of medicine. This appears to be the objective of a small minority of administrators and trustees.

The curricula of modern osteopathic schools now are patterned largely after those of schools of medicine. The level of education provided by some has improved since the conclusion of the last war. There have been recent discussions between a committee of our Board and a similar group of the American Osteopathic Association. The representatives of the osteopathic profession express a desire for our assistance in further improving the education of students in osteopathic schools. In thirty-odd states the licenses granted to osteopathic physicians approach or approximate, for practical, legal purposes, those granted to doctors of medicine. We cannot accept or recognize the basic concept of osteopathy as a valid method of treatment of disease. The osteopathic profession apparently appreciates that fact as evidenced by the progressive reduction of the emphasis upon the teaching of osteopathy in favor of instructions in medicine and surgery. Removal of the stigma of cultism would hasten that process.

It is my considered opinion that the A. M. A. Council on Medical Education and Hospitals should be permitted to aid and advise schools of osteopathy and that we should facilitate the opportunities of these schools to improve their faculties by removing any barrier of unethical conduct on the part of doctors of medicine who may teach in these schools. I recommend that the House take action to implement these suggestions.

We must continue to strive for greater coöperation between medicine and the dental, nursing and pharmaceutical professions. Closer relationship will work to the advantage of all.

The public relations of medicine have improved but much remains to be done. In one sense, the esteem in which medicine is held by the public is the total of the patient-physician relationships of the entire country. The good deeds of the ninety-five per cent or more of the profession go unnoticed and are taken for granted. The transgressions of a very small proportion of physicians do untold harm to the entire profession.

Our Code of Ethics is not a body of law but is a pattern for conduct. In a sense it is the code of the gentleman in the practice of medicine. Even if it did not exist it would not be violated by many because the vast majority of our members are gentlemen.

We have long recognized and subscribed to the dual obligation of the physician to his patient: To render to the patient the best possible medical care and to deal fairly with him in all ways. Unfortunately there are a few of our colleagues who do not respect these obligations.

When these are encountered they must be thrust from the company of gentlemen. There can be no compromise with dishonesty or unethical conduct. We owe forthright action not only to the public but to ourselves. Respect, to be maintained, must be deserved.

Grievance committees have gone a long way in improving the situation but the mere existence of such committees is not enough. They must be composed of physicians who are respected, not only for their professional attainments but, also, for their character, impartiality and courage. These committees must be active, easily available and the public must be informed of them and the means of access to them.

These provisions will do much to inspire public confidence. The work of these committees can be greatly reduced if the physician will discuss all aspects of his services to the patient at the outset of his contact with him. This procedure will reduce misunderstandings to a minimum and since most complaints against the profession are based upon misunderstanding these will be greatly lessened.

There also has been a great change in the public position of medicine. Medicine and the American Medical Association had been subjected to years of the most vicious, systematized campaign of vilification ever waged against a respectable profession and organization devoted to the public interest. We were not prepared to meet these onslaughts. You all recall vividly the situations which confronted us in December, 1948.

Conditions have changed. We are stronger, more unified and are better able to prevent the destruction of the high standards of medical care inevitable in socialistic schemes of its administration. Medicine has become a significant force in American life.

The vigorous support of physicians and others throughout the country who perceived the danger to the future quality of medical care has brought about this transformation. This activity stemmed largely from the National Education Campaign so ably directed by Clem Whitaker and Leone Baxter. They deserve great credit for their splendid performance in the face of many difficulties. I wish to express the gratitude of American medicine and my own personal thanks to them for an important job well done.

When one thinks back over the period of three and one-half years and observes the change, he can-

not help but be impressed. In that short time medicine has changed from an ideal whipping boy for any demagogue who wished to make a rabble rousing speech into a strong body able to respond with sufficient vigor and effectiveness to make the profession an unwise object to attack.

In the long view an even greater contribution, perhaps, has been the insistence that we meet the problems confronting medicine on a positive, constructive basis and that the Association develop a strong public relations department of its own to deal with matters of fundamental importance now and in the years to come. I have described the department and its operations in a President's Page and believe it to be growing in effectiveness.

As a result of our efforts and the increasing strength of medicine, those who would destroy our capacity to render the best care to the American people have altered their strategy. As far back as the 81st Congress it was apparent that no all-inclusive bill for socialized medicine could be passed.

Our opponents realized this earlier than did we and altered their course correspondingly. They ceased the effort to overwhelm us by frontal attack and resorted to more subtle flanking maneuvers by concentrating upon the so-called fringe bills, the most important of which was federal aid to medical education. To date we have been successful in preventing legislation which would have placed the medical schools of this country in imminent danger of bureaucratic control.

We recognize that our medical schools are in financial distress and we are making an effort to alleviate this situation through the American Medical Education Foundation and the National Fund for Medical Education. The results to date, this year, are more encouraging than in the first year. Every one of us owes a great debt to medical education and it must have our fullest support. Medical education is every doctor's business.

Another manifestation of the recognition of changed conditions has been the politically inspired appointment of the President's Commission on the Health Needs of the Nation. There is adequate evidence to establish that it was created for the purpose of removing a very troublesome issue from public consideration during an election year. This course of action was predicted by a competent observer months in advance and we now have sufficient information of the immediately preceding events to know this to be the case.

Doubt remaining in the mind of anyone concerning the political motives behind the creation of the Commission should have been dispelled by the President's recent unwarranted, undignified and intemperate attack upon the American Medical Association. It is

apparent that the Administration's intention to socialize medicine has undergone no change. It is obvious that it will resort to parliamentary legerdemain to accomplish what cannot be achieved by more direct and honest methods. The angry petulance of the outburst provoked by the Association's exposure of the political trickery reveals the true colors of the Administration.

The Commission was assigned an impossible task to perform within the period of time allotted and has been described as an organization whose principal accomplishment would be to survey all pre-existing surveys to decide if additional surveys were needed. I have discussed the appointment of this body at length elsewhere.

The Board of Trustees was unanimous in denouncing its creation and the political purposes behind it. Primarily out of deference to the chairman of the Commission, the American Medical Association has made the information in its possession available to the Commission and authorized officers and employees to testify before it while completely and thoroughly disapproving of its appointment.

After such testimony has been given, by participation in panel discussions, agents of the Commission have made purported digests of the testimony. In certain instances these have ignored completely most of the statements made to the Commission. Participants have then been requested to approve or amend the distorted digests. To amend the statements adequately would require days of effort in addition to the time occupied by travelling to and from Washington and testifying. The digests have the appearance of preconceived editorialized opinions of the person or persons preparing the abstracts and do not report fairly the points of view presented to the Commission. It is obvious that this procedure is not compatible with fair presentation of the facts. I bring this situation to the attention of the House to the end that it may be able better to evaluate the ultimate report.

In view of the magnitude of the task, the limited facilities and the short period of operation — characterized by the Commission chairman as "too big a

job for one year" any report emanating from it must be carefully examined. It will not only be based upon inadequate time and opportunity for study but may have all the misleading and dangerous attributes of a snap diagnosis. The report may be voluminous and impressive in appearance but probably will reflect the preconceived ideas of a majority of the Commission. It must be scrutinized with great care.

Let us not be misled by the apparent quiet of the moment. Our battle is not yet won. Complacency could well be a fatal error. I recall clearly the false security of 1946 at which time it was said that socialized medicine was "as dead as a dodo." Two years later American medicine confronted the gravest crisis in its history. There also are important external threats as will be detailed to you by Dr. Bauer.

Few persons realize the distance we have travelled, as a nation, down the road to socialism. As physicians we know that in the course of many diseases a point is reached where the changes of structure in the tissues become irreversible and restitution of normal function becomes impossible. The disease of socialism which affects our body politic is at the present time not far from that point.

This may well be the year of decision. Unless the trend toward an all powerful government progressively extending its influence into our daily lives, limiting our horizons and sapping our initiative is halted, the changes in our political, economic and social structure will soon have reached the state of irreversibility. If this occurs we will have sacrificed the most precious heritage any nation ever had, and for a mess of socialistic pottage.

Medicine's firm stand has encouraged others to resist this process. At the present time we have more and stronger allies than ever before.

I urge every citizen who values the American tradition of freedom, opportunity and dignity of the individual to utmost effort this year. This may be our last chance to preserve those essential ingredients of American life.

Our leadership has inspired others. We have a great responsibility and a great opportunity. Let us not be in default.

AMA Conducts Survey On Research Projects

Questionnaires will be sent out this month by the AMA's Committee on Research to determine what medical research projects currently are in progress throughout the country. The survey has a three-fold purpose: To establish an up-to-date file of medical research projects; evaluate the premise that certain fields of medical research are suffering from lack of

financial support, and consider the actual contribution of individual scientists in terms of free time and personal expenditure of funds. A random sample of 15,000 physicians from all parts of the United States and selected personnel from medical schools, public health services and pharmaceutical firms will be asked to participate in the survey.

THE PROBLEM OF THE PREMATURE INFANT

ALICE A. S. WHITTIER, M. D.*

Although the infant death rate for the first year of life has shown a marked drop in the past few decades, by far the greater part of this decrease in infant deaths has been in the age from one month to one year with only a slight improvement in the number of deaths in the first month of life. Of the deaths in this latter group, approximately 50% fall in the premature group. Consequently in trying to improve our neonatal mortality, we are faced with the problem of the premature. This problem belongs to both the obstetrician and the pediatrician.

When is an infant premature? An infant weighing less than 2500 grams (or 5½ pounds) is considered

premature. Other criteria for prematurity are gestation period of less than 38 weeks and a birth length of 47 cm. or less. The extent of the importance of prematurity can be appreciated when we realize that 7 to 10% of all births are premature and that prematurity is the 8th leading cause of death regardless of the time of death.

The problem of preventing prematurity and of postponing a premature birth as long as possible lies with the obstetrician. This importance is seen when we compare death rates in the prematures of various weight groups. As an example, in New York City for 1947, we have the following statistics:

Birth Weight Gms.	Approximate lbs.	Total Births	% of Births	Deaths	Rate Per 100 Births
Under 1000	1 lb. 3 oz.	584	4.2	546	93.5
1000-1499	1 lb. 3 oz. to 3 lb. 5 oz.	859	6.2	471	54.8
1500-1999	3 lb. 5 oz. to 4 lb. 6½ oz.	2307	16.8	416	18.0
2000-2499	4 lb. 6½ oz. to 5½ lb.	10032	72.8	491	4.9
Total		13782	100.0	1924	14.0

As can be seen from these figures, the survival of babies under 1000 gms. is very low while that of those weighing over 2000 gms. is high. So the longer a threatened premature birth can be avoided, the greater the chance of survival of the infant.

In approaching the cause of prematurity, we are confronted with the problem that in about 50% no detectable reason can be found. Of the remaining 50%, 15% are associated with multiple births, 15% with toxemias of pregnancy, and 20% with many different causes such as antepartum hemorrhage, premature rupture of the membranes, maternal illness, infectious disease, trauma, abnormalities of the pelvic tract, etc.

What can be of help in preventing prematurity? Adequate diet and adequate maternal rest are factors which can be stressed along with treatment for specific illnesses. There are statistics showing that patients 20% and more overweight and 20% and more underweight show a much higher incidence of toxemia than those in the intermediate group. Prematurity is definitely more frequent in those mothers who receive a poor diet. Once premature labor has threatened, bed rest becomes of prime importance, and sedation is frequently helpful. If we refer to the previous table of rates of deaths by weight groups,

we can readily appreciate the importance of keeping a fetus in utero for one month when thereby the fetus gains 600 grams in weight.

Provided premature birth cannot be avoided, every precaution for the welfare of the infant must be taken. If the mother understands that the chances of asphyxia in the infant are lessened if she does not receive sedation, she is usually willing to coöperate. Local or pudendal block anesthesia is recommended. Daily penicillin to decrease infections and the use of vitamin K in prolonged labors with the hope of cutting down the danger of hemorrhage are treatments to be considered. The giving of oxygen to the mother during the entire delivery is advocated. Authorities agree that a wide episiotomy is indicated but there is a difference of opinion in regard to the use of elective forceps. The obstetrical department at the New York Hospital believe in spontaneous delivery if possible. They use forceps only if the second stage is unduly long.

With the shortening of intrauterine existence, the infant is subjected to many handicaps which involve all systems of the body. Due to faulty control of body temperature in the premature, heat must be supplied and there should always be ready a heated crib in the delivery room at the time of delivery. For the premature nursery, there is a variety of incubators on the market but for the very small baby, the

* Chief, Pediatric Service, Maine Medical Center, Portland, Maine.

Isolette is very desirable. Heat can be regulated, oxygen can be supplied, humidity can be controlled, and the baby protected against infection. For the larger premature, the Gordon-Armstrong unit is very satisfactory.

The premature nursery should be a separate unit. There should not be more than six babies to a nursery and there should be a space of 30 square feet per bassinet and a minimum of 2 feet between the units except in cases where closed units such as the Isolette are in use.

Every premature baby should have a physical examination promptly but judgment should be exercised as to the completeness of the examination depending upon the condition of the infant. Prematures should be handled as little as necessary and examination and treatments should be grouped so as to disturb the premature as little as possible.

Anoxia has to be guarded against constantly. Clearing of the air passages is extremely important. Simple suction is often sufficient but intratracheal intubation and insufflation should be used when necessary in the delivery room but only used by properly trained personnel. In the premature nursery, the baby should be under constant supervision and suction used repeatedly as indicated. At the New York Hospital, it is thought that the most helpful stimulants are caffeine sodium benzoate 20 mgm./K per dose and adrenalin 1:1000, 0.1 c.c. I. M., and nurses are given routine orders for these, to be repeated as indicated. Respiratory difficulties are frequent and are dependent upon the immaturity of many different systems. The gag and cough reflexes are weak and therefore aspiration of foreign material is frequent. Dr. S. Z. Levine has shown that the persistence of atelectasis in the premature is often dependent at least in part upon the small amount of pulmonary elastic tissue. Hyaline membrane, a condition relatively recently described, is most common in prematures and those born by Caesarean Section. It occurs usually within the first two days of life and has run its course by seven days if the patient survives. Dr. Sidney S. Gellis of Boston recommends oxygen and very high humidities. All babies born by Caesarean Section should have the stomach aspirated. Prophylactic antibiotics are advisable when one is confronted with the condition of hyaline membrane.

Infections in prematures are often overlooked unless the possibility is always kept in mind. It is advisable to give antibiotics which will combat both gram positive and gram negative organisms (the combination of aqueous crystalline penicillin and streptomycin is probably the best at present). Antibiotics (10,000 units of aqueous crystalline penicillin every 12 hours for 48 hours and 20-40 mgm. streptomycin/kilo a day in 2 or 4 doses can wisely be given

to those cases in which there is danger of infection such as in babies brought to the hospital from outside, in those from mothers whose membranes ruptured prematurely, and those from mothers who have an active infection.

Whereas a full term baby usually regulates satisfactorily the amount of food he takes, the doctor has to use great care in feeding the small premature. Too early feeding is a common mistake. It is generally agreed that the premature should have nothing by mouth for at least 12 hours and nothing more than glucose for the next 12 hours. In the smallest prematures, it is wise to withhold everything by mouth for 24 hours and, at times, for 48 hours or even longer. The larger prematures (over 1650 gms.) can usually be nipple fed. Feeding by gavage is the generally accepted method for those weighing less than 1650 gms. and is used also for those who do not suck well or who tire easily. For the first feedings, 5% glucose solution is best given every 3 hours (15 to 20 c.c./K/12 hrs.). Dr. S. Z. Levine has done work to show that the small premature cannot tolerate fat well and for those weighing under 2000 gms., he advocates a half skimmed milk (alacta with water and added carbohydrate). Feedings should be increased very gradually. If the baby does not take the necessary amount of fluid by mouth, the deficit should be made up by giving it parenterally. It is advisable to start A-D-C vitamins by the 7th day.

There are some special problems which occur in the premature. One of these is neonatal edema, a condition most common in the babies of smallest weight. There is swelling of the feet, hands, face, and often of the scalp. Occasionally, the entire trunk is involved. This edema results from poor circulation and anoxia. These infants must be watched closely for the condition of the skin turgor and for dryness of the tongue and lips, and fluid given when indicated. These babies with edema of the hands and feet usually absorb parenteral fluid well.

Prematures show a greater incidence of jaundice than the full term babies do and this is often due to liver immaturity. If it lasts longer than three weeks, however, then pathological causes such as obstructive jaundice by inspissated bile must be considered and less often, biliary atresia.

Central nervous system injury is also more common in the premature than in the full term, intraventricular hemorrhage being 6 times as common and subarachnoid hemorrhage 4 times as common.

As has been so often stressed, we must watch for anemia. Due to the shorter intrauterine period in the premature, the iron storage is diminished. Most of the iron in the newborn baby is delivered to it in the last trimester. Anemia often develops from the 4th to the 6th week. If, however, anemia develops in the

first week, we must look for causes such as sepsis, syphilis, constitutional anemia, etc. The problem of erythroblastosis is dealt with in the same general manner as in the full term.

No discussion of the premature is complete without some mention of retrolental fibroplasia. This condition appears most often in the premature infants of low birth weight (1360 gms. [3 lbs.] or less) and of gestational age of 6 to 7 months. Dr. Theodore Terry of Boston first called attention to this condition in prematures and gave it this name. Later work has shown that the true condition is a disease of the retina and not a disease of the hyaloid system as was previously thought. There are six stages in development of retrolental fibroplasia and workers have now shown that the disease may become arrested before marked impairment of vision takes place and that there may be regression. Vascular dilatation, the first stage of the disease, appears about the fourth to sixth week of life although there may be slight vitreous haze at birth. Many investigations have been undertaken to determine the etiology but it remains obscure. No effective treatment is as yet known. Evaluation of treatment is difficult because there is spontaneous resolution in many. The importance of the condition, however, can be readily appreciated for 50% of the children in the group of pre-school blind are those whose blindness is the re-

sult of retrolental fibroplasia. The doctor must recognize the condition early and give the mother information as to where to go for help in caring for her blind child.

While the infant is still in the hospital, the visiting nurse should visit the family and make plans for the later arrival of the premature to the home. This is a very important service for good after care is essential and the nurse is the intermediary between the hospital and the return to the clinic for follow-up of those who cannot afford private care. The nurse can help the mother to get the most suitable layette, see that the mother knows how to prepare the formula, and if the home is not suitable, she can report the same and then the social service department may be able to help solve problems.

Thus, for the proper care of the premature, there is need for team work and on this team are the obstetrician, the pediatrician, the public health representative, the nurse, the dietician, the social worker, and the visiting nurse. To this, we should also add the child pathologist for he is the one who frequently helps us to add new knowledge to help in future care.

Much of the material presented here was obtained from the Institute on The Care of The Premature Infant, held at the New York Hospital, June, 1952.

BRONCHIAL ASTHMA — PITFALLS IN DIAGNOSIS AND TREATMENT

BENJAMIN ZOLOV, M. D.*

The purpose of this article is twofold—first, to call attention to the need of early recognition of a most troublesome disease and secondly, to maintain a safe and sane attitude in the proper treatment of this condition. If there appears to be a tendency toward repetition of known facts, its only purpose is to emphasize a sincere effort to bring simplicity to a somewhat confused state of the wheezing patient.

The advent of anti-histamines, antibiotics and steroid hormones the past few years has given the physician a marvelous opportunity to render more comfort to the asthmatic patient than at any other period in the history of medicine. However, a careless disregard for some of the basic principles in the diagnosis and treatment of this type of patient has caused undue hardship financially and physically to both the patient and the family.

To both the pediatrician and general practitioner falls the happy lot of first recognizing and treating

asthma in children. What are some of the early pitfalls in recognition of the disease? Too often the delay in diagnosis has been due to the fact that the physician has been satisfied with repeated diagnoses of "bronchitis." A positive family history in over 70% of asthmatic individuals should serve as a gentle reminder in recognizing some of the early cases. Is the physician justified in reassuring the disturbed family, that symptomatic treatment will cure the situation? Is it fair to allow parents to assume that the child will gradually "grow out" of his difficulties as the child physically and mentally matures? It is the rare exception that has the good fortune to fall in this category.

The fact that 10% of the general population suffer major allergic manifestations and the fact that 50% of adult sufferers date their allergy back to childhood can only serve to remind one that allergy is not altogether a self-limited disease.

In a careful study of 449 asthmatic children, seen under the age of thirteen, Rackemann and Edwards¹

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found that 25.8% were sensitive to animal dander, 8.1% allergic to foods, 4.7% to pollens, 43.3% mixed and unidentified, 7.7% bacterial in type.

In many cases of respiratory allergy, it is easy to overlook an infectious sinusitis or an allergic or bacterial pneumonitis. A careful examination of the nasal secretion may point to an allergic or infectious etiology. Yet to the casual observer many of these episodes would be symptomatically diagnosed as allergic. Certainly the avenue of treatment would be ineffective if the latter approach were maintained.

Every asthmatic child should have the benefit of a proper nose and throat consultation. The problem of tonsillectomy in some of these children poses a difficult decision for the physician as well as the family. Mueller and Flake² recently reported a series of 41 children with asthma of over two years duration associated with respiratory infection who were treated by X-ray or radium irradiation of the nasopharynx. Improvement from six months to four years was noted in 80% of these treated.

My experience with asthmatic children in this locale has taught me to appreciate the large number of patients who fall into the category of Rackemann's "mixed and unidentified" group of patients. Here one finds that bacterial as well as inhalant and food allergy continue as trigger mechanisms in the production of asthma.

These children may be compared to the delicacy of the apothecary scale — where the mechanism may become unbalanced under the least abnormal stress. The proper recognition of every etiological factor must be evaluated in order to keep these children happy without making them mental or physical burdens to themselves or to their parents.

With regards to methods of diagnosis, the skin tests offer a comforting tool in confirming as well as determining the cause of bronchial asthma. Certainly without the skin tests, the tremendous strides in the field of allergy could never have been attained. However, the skin test is fallible. Ratner³ emphasizes that on many occasions the skin remains insensitive and there are many other problems of anti-body fixation which unfortunately the skin cannot reveal. In addition skin sensitivity changes from time to time — putting additional burdens on the observer.

Is it enough to inform the parent of an asthmatic child who is sensitive to a cat — to remove the pet from one part of the room to another? I can appreciate the close attachment that the family as well as the child may have for a pet cat or dog. However, taking the pet off the bed and allowing the animal to remain under the bed, will serve no useful therapeutic aid to the allergic individual. Complete removal — blunt as it may seem — is the only justifiable procedure.

The use of anti-histamines in the symptomatic treatment of bronchial asthma has proved most disappointing, with the probable exception of Benadryl. Epinephrine, ephedrine sulphate, and more recently the steroid hormones are the sheet anchors of choice in the treatment of the acute episodes. Unless infection is associated with these attacks, the use of antibiotics is wasteful and costly.

A commonly stated concept in the evaluation of bronchial asthma and which has proven basically sound may be summed up as follows: "When asthma begins before age 30, the cause is allergy unless proved otherwise; but when asthma begins after age 40, the cause is not allergic unless proved otherwise."

Asthma in adults, as previously emphasized may be a continuation of the disorder from early life. Untreated hay fever notably falls in this class—where approximately 60% of patients with pollen sensitivity develop asthma. The use of anti-histamines offers false security in the treatment of this phase of allergy. Any physician who resorts to this method of treatment alone may be doing a severe injustice to his patient as well as inviting criticism from the patient at a later date.

Quite often the physician forgets that ageing asthmatic patients develop arteriosclerosis as well as any other group. Awareness of this simple fact will alert one to the proper use of treating the combination of heart disease and bronchial asthma should that situation arise.

Bacterial and cardiac asthma are frequently extremely difficult to diagnose in the patient over 50. One of the simple tests that can be easily carried out as an office procedure is circulation time as determined by the injection of calcium gluconate. Five c.c. of Ca. Gluconate (.5 gm.) is rapidly injected through a 20 gauge needle intravenously. The end point, a feeling of warmth starting in the throat occurs from 7 to 16 seconds normally or in allergic asthma. In cardiac asthma or cardiac decompensation this end point will often be delayed. This method is not infallible, but very often offers a quick and simple aid in diagnosis.

One of the most effective drugs which enjoys wide use in the professional field in the treatment of bronchial asthma is aminophyllin, used intravenously or rectally. A word of caution should be mentioned here regarding the injection of aminophyllin. In order to relieve bronchospasm effectively aminophyllin should be given slowly preferably with a 22 or 24 gauge needle requiring at least 4-5 minutes for administration. It is important to remember that reactions from the injection of aminophyllin occur while the material is being given and consist of a feeling of heat, flushing of the face and neck, a burning of the eyes, a sense of constriction in the chest, nausea

and vomiting and occasionally even convulsions or coma. The administration is not without danger. Gay⁴ reports that several deaths have occurred during the time of injection. In each case death was instantaneous, apparently from respiratory paralysis.

Probably the greatest aid and comfort which has come to the physician as well as the patient, has been the use of ACTH and Cortisone in the treatment of bronchial asthma. So much publicity has been disseminated to professional as well as lay persons regarding the uses of these hormones that even the best informed become confused.

Needless to say, both drugs are enjoying wide usage in all types of asthma, allergic and mixed types. The original high cost of the medication has prevented many patients from receiving the benefits of these drugs. In one sense this has been a blessing in disguise, because the cases were carefully picked for treatment and indiscriminate use was avoided. I have had most of my experiences with the use of Cortisone and my few brief remarks will be limited to this drug.

Three pharmaceutical houses now market cortisone intramuscular and cortone orally, Merck, Upjohn, and Schering. As new competition enters the field of production, the cost of the drug has been gradually reduced.

Cortone orally seems as effective as intramuscular administration. It should be used in those cases that respond poorly and slowly to the usually symptomatic treatment. Initial daily doses of 250 mg. orally, gradually tapering off by 25-50 mg. daily for a week or ten days usually controls the severe asthmatic particularly in status asthmaticus. Bacterial infection may be easily masked however, while the drug is used. It is not a cure all, and should be discontinued when the proper therapeutic response has been obtained. Profuse laboratory work is not essential, but careful urine analysis and blood pressure readings should be a necessary part of the treatment. Low sodium intake and additional potassium in the diet

in the form of potassium chloride 2-4 grams daily should be given while the drug is used. The patient and physician becomes aware of the weight problem with this regime. Known diabetics may require twice as much insulin while cortone is taken.

Children are prone to develop hypertension quicker than adults with the use of this drug. Extreme caution should be used with children under the age of six years.

Some individuals in anxiety state or some with previous psychotic episodes may suddenly become acutely insane with treatment by the steroid hormones. These unfortunate patients may later require mental institution care from weeks to months. There are warnings to the oncoming psychotic condition in some cases. The patient will be very disturbed at night time, saying that he cannot sleep, even though he apparently does.

SUMMARY

A plea for conservative and effective diagnosis and treatment of bronchial asthma has been presented. Particular emphasis has been stressed on early diagnosis in children. The recognition of bacterial infection is important in this age group.

Untreated hay fever still remains as a complicating problem in adulthood, with bronchial asthma resulting in about 60% of this group.

A brief review of the steroid hormones with the proper respect of the complication from these drugs has been emphasized.

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New Pamphlet On Cost of Sickness

To create a better understanding of one of the major causes of patient-doctor misunderstanding—the cost of illness—a new pamphlet has been designed for public distribution. Entitled "Your Money's Worth in Health," the booklet stresses the various aspects of patients' medical bills and the cost of illness in relation to the national income. The pamphlet shows graphically that the cost of illness has not risen as much or as rapidly as other consumer goods. This illustrated eight-page pamphlet soon will be

made available to AMA members and medical societies for distribution to the general public.

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If you are planning to visit Chicago this year, plan to take advantage of the new guided tour service at AMA headquarters. Here's a chance to see your Association firsthand. This tour program is to be a permanent AMA service.

THE UTERINE FIBROID

K. ALEXANDER LAUGHLIN, M. D.*

The fibroid or fibromyomata of the uterus is one of considerable importance by reason of its frequency. It is generally estimated that one out of every five women in late sexual life has smaller or larger fibroids. These tumors must be related, at least indirectly, to a woman's menstrual function because they never seem to appear before puberty or do they grow or produce symptoms after the menopause but they do seem to be increasingly common as the climacteric time of life approaches. This would suggest that a hormonal etiology; and the ovarian estrogens have been suggested since conditions such as cystic ovarian disease and pregnancy, which we know produce hyperestrinism, frequently lead to their appearance or to their rapid growth.

Pathologically, these uterine tumors are composed of varying proportions of fibrous tissue and smooth muscle. The amount of the smooth muscle possibly being secondary. The different response of the fibromyomata to certain stimuli, for illustration, pregnancy, may be a function of the tissue mixture. A small fibroid with a high proportion of muscle tissue will hypertrophy rapidly under the influence of the estrogen excess during pregnancy and will atrophy with even greater rapidity after the puerperium; while a tumor which is predominantly fibrous tissue is subject to less marked changes in size. The presence of endometrial glands and stroma in the tumor produces an adenomyoma which cannot be distinguished clinically from a simple fibroid.

There is a great tendency for these tumors to be multiple; a fact which explains their frequent recurrence after a simple myomectomy or fundectomy. Evidently they develop from single cells or small cell nests situated in the myometrium, but whether these anlagen represent specialized cells or are merely cells which develop an abnormal response to some hormonal stimulus is not known. In any event, the tumors are distinct from the myometrium and are surrounded by a capsule or lymph space which facilitates their enucleation. In all probability, the fibromyomata originates in the uterine wall and then follows the path of least resistance as they grow to become subserous or submucous. The fibroids which are submucous are not found as commonly as the other variety, possibly due to the inevitably greater resistance afforded to their projection into the uterine cavity. There are some fibroids which develop near the peritoneal surface, which is evidenced by the frequent appearance of very small tumors in this

location. Fibromyomata are seen more commonly in the uterine body but occasionally develop from the cervix when they protrude into the canal and usually become pedunculated.

When the fibroids project from the outer surface of the uterus, namely in the broad ligament attachments, when there is no peritoneal covering, they become intraligamentous. Sometimes, but rarely, does one find a subserous nodule adherent to a neighboring structure, for example, the omentum, and if it does it will eventually become separated from the uterus and is known as a "wandering fibroid." If this occurs the blood supply is rather small, and this may be the reason why so frequently various forms of degeneration are a prominent factor in this type of tumor.

When the uterine fibroid grows, the uterine mass becomes enlarged and the cavity generally is lengthened, thus increasing the surface area of the endometrium. The hyperestrinism which was thought to be one of the etiological factors in regards to its growth, produces hyperplasia of the mucous membrane with thickening of that structure except over that portion of fibroid that protrudes into the cavity. The hyperplasia, at times is so marked as to produce polyps. Even the ovaries may be enlarged and edematous, and many contain follicle cysts.

Most fibroids have an inadequate blood supply, therefore the nodules are frequently edematous and may show some type of degeneration as mucoid, hyaline or "red." Sometimes, but rarely, do they become calcified in areas or undergo liquefaction necrosis and therefore become converted into cyst-like structures. Infection is rare in fibroids except in the submucous variety where they protrude through the cervical os. Occasionally, malignant degeneration, sarcoma, develops and is associated with rapid growth and unusual softness of the tumors. Carcinoma which arises from the portio epithelium (epidermoid) or adenomatous which arises from the endocervix or endometrium, is not uncommon but may be marked clinically, at least, by the presence of the fibroid tumor mass.

The most common signs and symptoms referable to the fibromyomata are uterine bleeding, pressure complaints, obstetric difficulties, leukorrhea and general symptoms.

The complaint of uterine bleeding usually manifests itself as prolongation of the menstrual period with an increased amount of flow. Intramenstrual bleeding is uncommon except from exposed sub-

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mucous nodules, polyps, or associated benign or malignant degeneration. The excessive blood loss may be explained by the menstrual shedding of the hyperplastic endometrium from the expanded uterine cavity and by the hormonal imbalance which so frequently occurs. When the menopause has passed, the fibroid uterus is not in itself an acceptable explanation for bleeding, although necrotic submucous nodules may, on occasions, produce the symptom. The more frequent cause of such bleeding is due to malignant disease involving the cervical or body epithelium. However, any post-menopausal bleeding which originates in the uterus demands very careful investigation.

The complaint of pressure in the lower pelvis generally is manifested only when the tumors have attained considerable size although occasionally small nodules in special locations, as against the base of the bladder, may produce marked discomfort. The large tumors, however, by their weight alone, induce a sense of pelvic pressure or weight, congestive pain, urinary urgency and frequency, and rarely obstructive constipation may make its appearance. If there is any acute discomfort the torsion of the pedicle of a subserous nodule or red degeneration suggests the above: these, however, are usually associated with some elevation of temperature and leukocytosis. The symptom of dysmenorrhea may be prominent, especially when the nodules are submucous or when adenomyomata are present.

Obstetric difficulties such as sterility or the inability to carry a pregnancy to term, may be related directly to the fibroid condition; the association of fibromyomata and sterility has long been recognized but it is not known which is primary, although the fact that myomectomy occasionally is followed by conception suggests that the tumors may actually produce the infertility. The expulsion of a previable baby, which not infrequently occurs in women with fibroids, may be due to inadequate decidual formation, or to in-elasticity of the nodular uterus or to hormonal imbalance. It is very rare for fibroids to interfere mechanically with delivery, although such a complication may appear when there is a cervical nodule or when a pedunculated subserous tumor gravitates into the true pelvis. There may be, however, uterine inertia in women who have fibroids, producing prolonged labor due to the inefficient contractions and may have third stage difficulties with postpartum hemorrhages.

Leukorrhea is rarely a complaint except when there are degenerative fibroids or when a submucous tumor protrudes from the cervix and has become infected and necrotic.

There are very few general symptoms associated with fibromyomata except hypochromic anemia resulting from repeated blood loss. The old idea that

fibroids are associated with, and probably responsible, for heart damage is scarcely tenable and has largely been abandoned.

The diagnosis of fibroids is commonly made on bimanual examination when the uterus is felt to be represented by an enlarged, nodular or symmetrical mass which is characteristically hard. Small, submucous tumors may escape recognition by palpation, but can be recognized in films taken after the injection of a radiation-opaque medium into the uterine cavity. When the tumor is symmetrical, and especially when it is soft, pregnancy must be considered; the biological pregnancy tests should be utilized to effect differentiation.

When bleeding is the most common symptom, the differential diagnosis should involve consideration of the other common causes of blood loss from the uterus such as functional menorrhagia, especially in the premenopausal period; abortion in one of its various manifestations and malignant disease, particularly in those near the menopause and after the cessation of regular menstruation. It is never wise to make a diagnosis of fibromyomata until after a careful pelvic exploration has shown the uterus to be definitely enlarged. In doubtful cases, a diagnostic curetage may reveal another etiological factor which can be corrected by simple therapy.

The presence of a pelvic mass, even though it evidently occupies the position of the uterus and is nodular, does not necessarily make the diagnosis. Pelvic endometriosis, ovarian tumors and uterine carcinoma may cause confusion, a distended bladder or a normal pregnant uterus, may lead to diagnostic errors. Unless care is used the body of a completely retroverted uterus may be mistaken for a fibroid nodule.

The treatment of uterine fibroids depends upon various factors such as the age of the patient and her desire for future children, the location, size and rate of growth of the tumor and the presence of complicating pelvic disease. In general, symptom-less tumors need no treatment: they probably will regress in size or disappear after the menopause. The advisability of active treatment by radiation or radium or by surgical intervention will depend upon a review of the factors mentioned previously. Medical treatment is ineffective usually, although the usage of oxytocic drugs as ergot and pituitrin may be effective temporarily in controlling excessive bleeding. Rest obviously is indicated during periods of menorrhagia and an ice cap over the lower abdomen may help psychologically. The secondary anemia produced by the excessive bleeding should be combatted by the administration of an adequate diet with plenty of protein together with some form of iron and with vitamin B.

Radiation by roentgen ray or radium, is useful in

women near the menopause who have relatively small tumors with bleeding and who are not in good physical condition to withstand an operation. Pedunculated fibroids should not be irradiated. Tumors which are larger than a three months pregnancy, in women under forty years of age, and those which present evidence of associated disease of the pelvis should not have irradiation therapy of any kind. In any event when irradiation is advisable curettage of the uterus should precede it in order to eliminate the possibility of malignant disease or even pregnancy. Radiation acts upon the ovaries and causes regression of the fibromyomata by eliminating the production of the estrogenic hormone through the development of an artificial menopause.

In young women who wish to retain their child-bearing functions, myomectomy is indicated. Multiple tumors may be removed but the results are much better when only a single nodule is present. There is always a considerable chance that additional fibroids will appear later and require a second operation.

In fibromyomata, vaginal hysterectomy may be performed, but in general it is not as satisfactory as the abdominal operation. This type of operation is

more suitable for the removal of small tumors, which ordinarily do not produce symptoms indicating treatment of any kind. The larger uterine masses can be extirpated by morcelation through the vaginal approach but the procedure may be technically difficult. If there is any complicating pelvic disease it is a distinct contraindication.

The abdominal hysterectomy has the great advantage of permitting direct attack upon associated pelvic lesions and therefore is employed more commonly. Decisions as to the use of the total or subtotal extirpation of the uterus will depend upon the experience of the operator. The ovaries should be retained or removed depending upon their condition and the age of the patient.

CONCLUSION

Fibromyomata of the uterus produce various symptoms depending upon their size, location and condition. Fibroids with no symptoms require no treatment if they are smaller in size than a three months pregnancy. Other tumors should be treated by operation or radiation according to the well established principles.

STREPTOKINASE — STREPTODORNASE IN SURGICAL WOUNDS

Review of Enzymatic Debridement — Eight Case Reports

JOHN SONNELAND, M. D.*

In the past three years much has been written about enzymatic debridement. Most of the literature has appeared in journals of limited circulation and has usually dealt with the dissolution of pleural cavity coagulums. It has only been a few months since the price and availability of debriding enzymes has made feasible their use in surgical wounds. For these reasons, it was felt that a description of our experience using the enzymes streptokinase and streptodornase^a in surgical wounds at the Maine Medical Center would be of value.

SCOPE OF ENZYMATIC DEBRIDEMENT

Enzyme systems have been extracted from three general sources: 1. pancreas (trypsin), 2. vegetable (papain, C.P. enzyme and others) and 3. bacterial (clostridia, coliform, pseudomona and especially

streptococcal organisms). The coagulum of early wounds consists of fibrin and dead cells; as the wound becomes chronic, collagen is laid down on all sides. That is, the three chief elements of a chronic wound coagulum are fibrin, dead cells and collagen. Each element is dissolved by a separate enzyme; no one enzyme or enzyme system now known can dissolve more than one element. For instance, enzymes derived from one strain of Streptococci are called streptokinase (the "S-K" enzyme of the literature) and streptodornase ("S-D" enzyme), the former being very effective in dissolving fibrin while the latter dissolves nuclei and cytoplasm of dead cells. As yet there is no enzyme generally available for dissolution of collagen. Experimental work on collagenases is currently under way, these collagen enzymes having been derived from three sources: Clostridia, coliform-Pseudomona and vegetable matter.

Trypsin^b is particularly effective against simple protein molecules and causes dissolution of elastic

^a Sold as "Varidase" by Lederle Laboratories. Each bottle contains crystals of streptokinase (100,000 units) and streptodornase (25,000 units).

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^b Sold as "Tryptar" by Armour Laboratories.

fibers. Although trypsin was isolated many years ago, its complete mechanism of action is unknown. It loses tryptic activity in a few hours; and two investigators, Ziffrin and May, have reported its effectiveness rather limited.¹⁰

Enzymes capable of dissolving collagen are being investigated at the University of Cincinnati.² Two of the most promising enzyme systems are bacterial filtrates. The collagenase resulting from filtration of *Clostridium histolyticum* culture has reduced dead skin to an amorphous granular material *in vitro* in 36 hours. Another collagenase is being developed from a bacterial filtrate of *E. coli*, *B. proteus* and *Pseudomonas aeruginosa*. These bacteria were grown from infections in which skin lysis was a prominent factor. The velocity of the collagenase reaction has been increased over the past several years by repeated subculturing in the presence of dead skin; in effect, the bacteria are being trained to digest skin rapidly. Vegetable sources have been used to obtain several enzymes (one of which is papain), these also being collagen dissolvers and in an experimental stage. Results with vegetable-derived enzymes have not been too satisfactory.

Our clinical experiences, which are discussed below, deal with the use of streptokinase and streptodornase.^{1, 3, 8, 9, 10} These enzymes are derived from the filtrate of a strain of hemolytic *Streptococcus* which is nonpathogenic for man, thus avoiding toxic side reactions unrelated to the enzymes in question. The two enzymes are sold in combination, each having a different function in wound debridement.

Streptokinase has the power to dissolve fibrin. It does so apparently in an indirect manner by acting as the catalyst for an enzyme system found in the blood stream and in wound exudate.⁶ Fibrin is completely broken down by the lytic system into nitrogenous end products. Other proteins also have been split experimentally by streptokinase (e.g., casein, gelatin and other smaller protein molecules). Streptokinase is active at body temperature for 20-24 hours if the pH is alkaline, as it usually is in wound exudates.

Streptodornase is a mixture of enzymes^d whose primary function is the breakdown of the dead cell. One enzyme (desoxyribonuclease) breaks down the

chief constituent protein (desoxyribonucleoprotein) of the dead cell nucleus, the protein that comprises from 30-70% of the solid portion of purulent material.⁸ Another enzyme of streptodornase (ribonuclease) splits a cytoplasmic protein. The streptodornase enzyme system may also help to depolymerize collagen.¹⁰

The streptokinase-streptodornase mixture has a property in addition to that of dissolving fibrin and dead cell debris. The property is that of producing a marked leukocytosis at the site of local application. On examination of a wound's exudate after treatment with streptokinase-streptodornase, there is on the average a fourteen-fold multiplication of leukocytes, the multiplication reaching its height about 24 hours after application of the enzymes. The exudate shows not only more leukocytes, but younger, more motile phagocytizing leukocytes, especially polymorphonuclear cells. Simultaneously, clumps of dead leukocytes disappear.⁶

Secondary effects are obtained in the streptokinase-streptodornase reaction. By the act of lysing fibrin and dead cells, the viscosity of the wound exudate decreases and, thinned, the exudate can be flushed easily from the wound. The marked local leukocytosis obviously results in increased phagocytosis of bacteria. It is thus evident that with the decrease of wound coagulum and bacteria, healthy tissue will make its appearance. It has been emphasized that wound healing is a constantly inhibited process, that we should discard the concept of trying to *stimulate* healing, and that attention should be focused on eliminating the factors *inhibiting* healing.⁵ The inhibiting factors of edema, infection and fibrin-cellular coagulum are usually reduced or eliminated with streptokinase-streptodornase. The wound is then free to reverse the phase of infection and inflammation in which granulation tissue is soft, pink and spongy. It will begin a rapid regrowth of normal tissue.⁹ Subcutaneous tissues lying under and about the wound lose much of their edema. The shiny, whitish-pink skin surrounding the wound becomes more normal in appearance. The wound usually appears clean in 2-4 days; red compact granulation tissue is evident a few days later. At this time skin grafting or secondary wound closure, depending on the case, may be performed. The object is to cover the wound while the bed is healthy and before collagen is deposited to scar down the periphery of the wound, thereby leading to avascularity.

RESUME OF STREPTOKINASE-STREPTODORNASE USAGE

Many techniques of application of the enzymatic substances have been described for use in special conditions. In severe burn cases streptokinase-strep-

c Plasminogen of human serum is found abundantly in wound exudate. When plasminogen is activated by streptokinase, it changes into plasmin, which in turn dissolves fibrin.³ Two factors are variable in a given patient. He may have a high or low quantity of plasminogen in his exudate; if unusually high, the patient may have a severe toxic reaction from too rapid a protein break-down and systemic absorption. He may have had a previous severe streptococcal infection, giving him a high anti-streptokinase level; large quantities of streptokinase might, therefore, be ineffective in activating plasminogen.⁷

d Included: desoxyribonuclease, ribonuclease, hyaluronidase, nucleotidases, and nucleosidases.¹⁰

streptodornase has been used effectively by cross-hatching the dead skin on the 4-5th day post-burn into squares about 3 x 5 mm., the incisions passing down to normal tissue. Burned skin represents a denatured collagen attached to underlying viable tissue by a collagen-fibrin-cellular coagulum. Fibrin and cellular material are lysed and the denatured collagen sloughs. On extremities the enzymatic mixture may be applied in a gel medium (Lubofax), the gel covered with Xeroform or petroleum jelly fine mesh gauze.³ The enzymes may also be applied in solution to an extremity, using a pliofilm bag to envelop the extremity and prevent loss of the enzymatic solution. In abscess cavities streptokinase-streptodornase dissolved in normal saline may be injected by catheter. Some report mixing the enzyme crystals with antibiotics or 1:5000 zephiran chloride prior to intermittent or constant drip application by catheter.³ In open wounds some have suggested using an enzyme-gel mixture spread over the wound, replacing it once or several times a day. The suggestion has also been made that an enzyme-solution may be applied, sealing the wound with rubber or plastic sheeting adherent to the wound periphery with skin cement. Dosage varies, one article stating that streptokinase and streptodornase 10,000 units of each per day was quite adequate,¹⁰ while another source states that much larger doses were used³ (up to 6,000,000 units of streptokinase and 2,100,000 units of streptodornase, depending on the size of the wound). A wide variety of wounds have been treated with great success in suitable cases.^{1, 3, 9, 10} Unsuccessfully treated cases included infections with actinomycosis, long-standing tuberculous empyema and tuberculous meningitis.

In our experience with enzymatic debridement we have used only streptokinase-streptodornase in saline solution, never mixed with antibiotic or antiseptic. Although activity is stated to continue 20-24 hours, maximum effect is reached in one hour.⁸ We have, therefore, preferred frequent applications, usually at six hour intervals. Prior to each reapplication, the wounds have been flushed thoroughly with normal saline to remove coagulum liquefied by the enzymes. If a local rather than a systemic antibiotic was used, it was applied in its aqueous solution after the saline flush had removed liquefied wound coagulum. A total daily dosage per wound of streptokinase 20,000 units and streptodornase 5,000 units dissolved in up to 80 c.c. of normal saline proved quite adequate in our cases. In the treatment of abscess, a catheter was placed into the depth of the wound, through which the various solutions were injected in rotation throughout the day. In open wounds the enzyme mixture has been applied in aqueous solution, covered with a thin gauze cut to the wound outline, then covered with sterile oiled silk.

In a typical case, enzyme solution would be applied, followed in four hours by a saline irrigation, followed by application of an antibiotic solution. In two hours the enzyme solution would be applied again, and the cycle thus restarted. If one-fifth of the crystals in a bottle of Varidase^e were dissolved in 80 c.c. of normal saline and constituted the day's dosage, our orders would then read: Apply to wound 1. Varidase 20 c.c. at 6-12-6-12, 2. normal saline 100 c.c. at 10-4-10-4, and 3. penicillin 5,000 units/c.c. 20 c.c. at 10-4-10-4.

It should be noted that streptokinase-streptodornase treatment cannot assure control of infection and in one case even had to be suspended to allow more intensive antibacterial therapy. Such being the situation, a swab is taken of each wound prior to and during treatment. Sensitivity studies^f from the resulting culture guide us in the selection of the specific antibiotic or antibiotics for the bacteria concerned.

REPORT OF EIGHT CASES

Because relatively few cases of open wounds or abscesses treated with streptokinase-streptodornase have been reported, it was felt that our experiences with eight such cases would be of value. The eight cases are outlined in chronological order. With some exceptions, the results have been quite successful, wound coagulum being removed in a few days followed shortly by the appearance of a healthy bed of granulation tissue.

(1) Our first patient in the series was a 55-year-old man, who sustained a compound fracture, with subsequent chronic osteomyelitis, of the middle third of the left tibia. Wide saucerization was performed during the most recent hospitalization, which was two years following the accident. The wound was closed under tension after mobilizing the soft tissues lateral and medial to the wound. Necrosis of the wound margins resulted, leaving a defect measuring about 1.5 x 3 inches. Saline soaks were applied. The wound cleared slowly over a four-week period, and a skin graft was laid down despite a slight amount of purulent exudate. The infection was due to hemolytic *Staphylococcus aureus*, which was most sensitive to, and treated with, chloromycetin. The graft sloughed completely and on the 17th day following the graft, streptokinase-streptodornase was made

^e Cost to the patient has been reduced by dividing each bottle of Varidase crystals into five portions under sterile conditions. This has been done because each bottle of Varidase contains from 5-10 times the amount of enzymes essential for a day's dosage in our experience, and because enzyme crystals, once dissolved, should be used within 24 hours.

^f Sensitivity studies to determine the antibiotic or antibiotics to which a culture is most sensitive can be performed using "Dia-Discs," or Diagnostic Test Tablets of C.S.C. Pharmaceuticals, New York 17, N. Y.

available. Within 72 hours the character of the wound changed remarkably: a red, clean bed of granulation tissue replaced the shaggy infected wound; wound margins, which had been reddened and edematous, took on the appearance of normal skin. Within two weeks the wound had closed by scar formation. In view of the man's prolonged hospitalization and of limited vascularity over the site of saucerization, it was decided to leave the wound alone. It was felt better to settle for scar coverage rather than excise the scar and perform pedicle grafting. Varidase brought a relatively prompt culmination to a wound treated rather unsuccessfully over a previous seven-week period. The wound has remained healed for one year.

(2) A wound infection developed in an 83-year-old man six days following internal fixation of a fractured hip. The infection extended down to, and caused necrosis of, the fascia lata. Azochloromid wound irrigations were unsuccessful in a four-day trial period, as were urethane with penicillin irrigations in a five-day period that followed. The urethane-penicillin irrigations were accompanied by oral terramycin, it being the most sensitive drug for the hemolytic *Staphylococcus aureus* infection involved. Continuing terramycin, the local irrigations were changed to streptokinase-streptodornase, each irrigation being preceded by a thorough flushing of the wound with normal saline. Within two or three days wound debris had largely been eliminated except for necrotic fascia lata. The involved fascia was excised with scissors at the bedside. In two to three days, through the use of enzymatic debridement of wound coagulum plus excision of fascia (collagen of fascia not being affected by the enzymes), the wound became clean and suitable for secondary closure. The latter was wholly successful. The threat of wound infection spreading toward the fracture site was eliminated. A wound infection complicated by sloughing fascia was promptly brought to readiness for secondary closure largely through use of enzyme debridement.

(3) A 21-year-old white man sustained a refracture of the middle third of the right femoral shaft thirteen months after the initial fracture (treated at that time with a plate). An intramedullary nail was used for the treatment of the refracture, this being passed the length of the femur. Thirteen days post-operatively thin fluid began to flow from the superior aspect of the lateral thigh wound. The culture was sterile. It was thought to be a superficial hematoma. However, the drainage increased, and injections of streptokinase-streptodornase into the wound were begun by catheter without affecting the character or amount of drainage. Six weeks post-operatively wound exploration was performed, and an abscess of hemolytic *Staphylococcus aureus*, most sensitive to

chloromycetin and bacitracin, was found underlying the fracture site. Despite vigorous local therapy with streptokinase-streptodornase, saline irrigations and bacitracin solution, in addition to oral chloromycetin, frank osteomyelitis became established. The wound has since been treated with saucerization of the femur, the outcome still being in question.

(4) A case with a happier outcome is that of a 36-year-old man, who for two years prior to his most recent hospital admission had had chronic osteomyelitis of the middle third of the left tibia (the osteomyelitis developed from an ulceration over a Lane bone plate applied four years prior to the onset of the ulcer). The area of osteomyelitis was widely saucerized until healthy bone appeared on all sides. Post-operatively granulation tissue began to fill the defect. On inspection at the sixth post-operative day the wound was covered by a dirty-gray coagulum from which hemolytic *Staphylococcus aureus*, most sensitive to terramycin, was cultured. The wound was treated by a rotating schedule in which normal saline irrigation was followed by the application of four c.c. of saline containing streptokinase 5,000 units and streptodornase 1,250 units. The wound was covered by a thin gauze, which in turn was covered by sterile oiled silk to prevent absorption of the enzymes into the outer dressings. The dressing was repeated every six hours. Oral terramycin (500 mgm. every six hours) was begun. Within 48 hours the wound appeared clean and red. Had it not been a markedly concave wound resulting from saucerization of bone, it could have been skin grafted a few days later. The wound was given six weeks in which to fill and thereby offer a more satisfactory site for grafting. Granulation appeared compact, red and healthy. Split thickness skin graft had a complete take. To date (seven months post-operatively) the wound has remained perfectly healed, and there has been no evidence of further osteomyelitis. Enzymes and the specific antibiotic kept the wound clean and healthy until the optimum time for grafting had been reached.

(5) A 24-year-old man suffered a compound fracture of the lower third of the left tibia and fibula, the tibia being treated with open reduction and plating. During the operation edema of massive proportions developed in the injured leg, and closure of the wound was possible only through extensive plastic procedures. The wound of compounding over the fibula was closed under much tension. Undoubtedly the latter factor was the cause for an area of slough measuring about 2 x 3 inches over the fibular fracture; the ulcerating wound was discovered at the time of cast removal three weeks following the injury. Hemolytic *Staphylococcus aureus*, sensitive to bacitracin, was cultured from the wound. The wound was treated both by antibiotic and by local streptokinase-streptodornase irrigations. Six days after

initiation of the antibiotic and enzyme therapy, most of the slough had separated and the area appeared quite clean. The wound continued to improve, the base being filled with compact, red granulation tissue. The patient was then returned to his home in Canada. Unfortunately, chronic osteomyelitis developed. Although enzyme treatment quickly cleared the wound of slough, the three week interval between injury and discovery of the wound apparently gave enough time for sepsis to become established in bone.

(6) Streptokinase - streptodornase applications were discontinued after an eight-day trial period in a 62-year-old woman whose unhealed skin donor site of the thigh became heavily infected with *Pseudomonas aeruginosa*. A rotating schedule of acetic acid and the enzymes was used for the last few days of the trial period, this, too, being without success. (The wound responded to frequent cleansings and open-air exposure.) The case points up the inefficacy of streptokinase-streptodornase in the face of significant infection unresponsive to antibacterial materials.

(7) Varidase made possible earlier skin grafting in the case of a 36-year-old paraplegic upon whom a pedicle graft was used to cover the site of an excised sacral decubitus ulcer. The site from which the pedicle graft had been raised oozed so much at operation (bleeding time 18 minutes) that successful primary application of a split thickness skin graft was impossible. The pedicle graft site was treated with boric acid soaks until the 10th post-operative day. The wound culture showed *Pseudomonas aeruginosa*, most sensitive to bacitracin, terramycin and chloromycetin; the latter drug was given the patient. The boric acid soak plus chloromycetin treatment was ineffective: the wound surface was covered by a pyocyanase coagulum and the granulation tissue appeared pale and soft. Streptokinase-streptodornase applications were then begun, alternating with normal saline irrigations. Chloromycetin was continued. Within three days the character of the wound had changed remarkably. It became clean, red and firm. A few days later a successful skin graft was applied. Pre-operative preparation was obviously shortened and successful graft "take" enhanced by use of enzymatic debridement.

(8) A wound infection developed a week following biopsy of the right ilium in a 78-year-old man. The wound could be probed to its base of bone. Fearing osteomyelitis, intensive therapy was begun at once. The wound culture showed *E. coli* and hemolytic *Staphylococcus aureus*. The incision was only opened enough to permit passage of a catheter to its base. Injecting a radio-opaque medium through the catheter, an irregular cavity was visualized measuring about 1.5 x 3.5 inches. The treatment which was then begun was both general (chloromycetin)

and local (enzymes, saline irrigation, bacitracin). A rotation schedule was prescribed for local treatment in which the following solutions were injected into the catheter: streptokinase-streptodornase, followed in an hour by a thorough saline irrigation, followed by bacitracin (each injection being 2500 units of bacitracin in 10 c.c. of normal saline), the cycle being repeated three times during the day. In two weeks, X-rays, again using the radio-opaque solution, showed the cavity to measure now only 0.5 x 1.5 inches. Culture of the wound at this time showed *Pseudomonas aeruginosa* which was highly sensitive to streptomycin. The latter drug was given intramuscularly, and the irrigations continued. The cavity filled in rapidly, and the patient was discharged several weeks later. The wound has remained completely healed for six months. What might have been a serious osteomyelitic problem of some months or years duration was averted through vigorous use of specific antibiotics and enzyme debridement.

SUMMARY

Dissolution of fibrin and cellular portions of wound coagulums can be successfully accomplished by enzymes. The most successful enzymes appear to be streptokinase and streptodornase, which are contained in the filtrate of streptococcal cultures.

Coagulum in the chronic wound contains collagen, in addition to fibrin and cellular debris. No enzymes are commercially available which can successfully dissolve collagen, although there has been significant research in developing collagenases.

Streptokinase-streptodornase produces a marked leukocytosis at the site of application on a wound. In addition, secondary effects are noted: viscosity of the wound exudate is reduced and phagocytosis of bacteria is increased. The typical wound responds with loss of its edema and production of compact, red granulation tissue. Thus, wound healing is markedly accelerated and the time interval before grafting or secondary closure is reduced to a minimum.

Principles of using enzymatic debridement successfully appear to be reasonably frequent application of the enzymes followed by irrigation of dissolved coagulum. These steps should obviously be accompanied by specific antibiotic therapy. Wound debridement cannot be wholly effective in the face of heavy infection or of extensive collagen (fascia and scar) formation.

In the eight cases presented, streptokinase-streptodornase was ineffective in one patient in which there was heavy infection. Although the soft tissues improved remarkably in two other cases, osteomyelitis became established and thus prevented a successful outcome. The remaining five cases all showed an

excellent response to enzymatic debridement. Further morbidity was reduced and hospitalization was decidedly shortened.

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CASE REPORT: CONGENITAL HEMOLYTIC ICTERUS DURING PREGNANCY

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INTRODUCTION

Splenectomy for the active treatment of congenital hemolytic icterus (familial hemolytic anemia) has been established as an almost uniformly successful method of producing a permanent remission of the disease.^{2, 3, 4, 7} During pregnancy, the necessity of performing splenectomy for this disease is of rare occurrence but has been reported by Barnes and Doan² with favorable outcome. That splenectomy is not without potential hazard to the fetus and mother is well-documented by McElin et al.¹ They report on 17 non-gravid women who underwent splenectomy for congenital hemolytic anemia. Thirty-eight subsequent pregnancies are described in the series with 17 fetal deaths, no maternal deaths, but four maternal complications. ACTH has been used in the treatment of congenital hemolytic anemia with favorable but not striking response according to Davidson et al.⁵ They describe the beneficial effect of ACTH in two cases but state that the disease process becomes reactivated when ACTH is discontinued.

The following case is presented as a diagnostic problem and one in which ACTH therapy followed later by splenectomy resulted in complete remission of the disease to date.

CASE REPORT

B. L., a 27-year-old para 4, gravida 5, was admitted to the hospital complaining of fatigue, low back pains, abdominal cramps, nausea and anorexia. The patient had her last menstrual period 2½ months

previously, had been examined in the obstetrical clinic where the diagnosis of pregnancy was established. Routine laboratory studies revealed a marked anemia and the patient was admitted to the hospital for diagnosis and treatment.

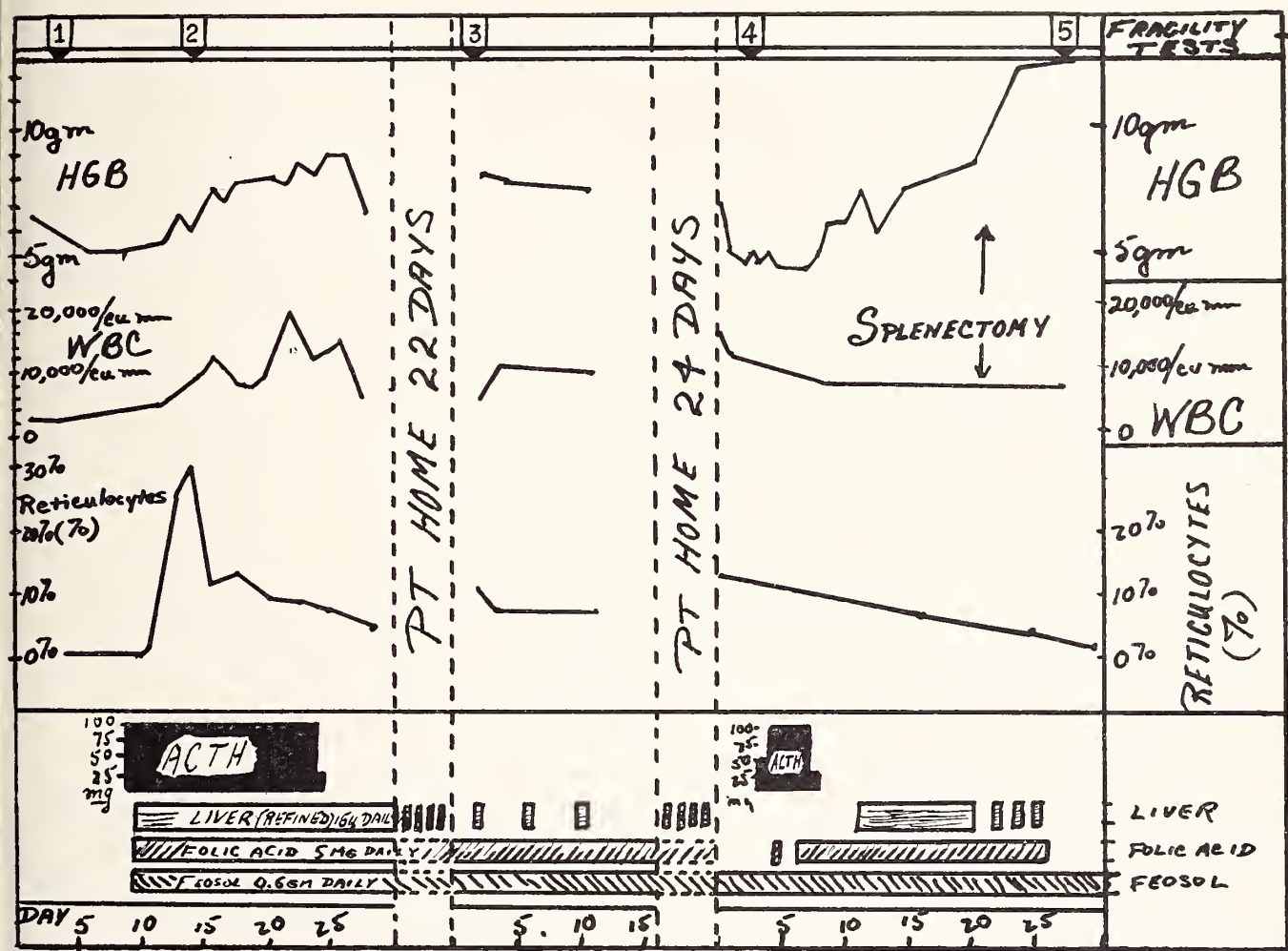
Past history reveals that the patient has had four uncomplicated deliveries, but it was discovered that during each pregnancy the patient was anemic with RBC averaging 2,600,000, Hgb. 60%, 8.8 Gm. Treatment with iron, vitamins and minerals, and adequate diet was without benefit. There is no record of blood studies between pregnancies. System review is completely negative. No history of purpura, bleeding gums, epistaxis, menorrhagia, melena, icterus, exposure to toxic chemicals, or use of potentially toxic drugs. Family history reveals that the patient's sister is chronically "anemic," has had three uncomplicated pregnancies, but further details were unobtainable. Her parents give no history of anemia or jaundice.

Physical examination revealed a well-nourished female with obvious pallor, no icterus, a grade ii systolic murmur at the apex, and a palpable, firm, non-tender spleen tip two finger-breadths below the costal margin. The uterus was felt four fingerbreadths above the symphysis.

Admission laboratory studies revealed the following: RBC., 2,610,000; Hgb. 46%, 6.7 gm.; WBC. 2,750, Neut. 64%, Lym. 32%, Mon. 4%. Urine urobilinogen present in dilution of 1:80, Sedimentation rate (Wintrobe) 14; icterus index 5u; platelet count 192,000; prothrombin time 100%; BUN 20 mg%; stool guaiac-negative; Kahn—negative; total

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TABLE I



protein 6.30 gm.; A/G ratio 3.35/2.95; blood and urine cultures negative. The initial studies suggested a hemolytic type of blood dyscrasia and further laboratory studies were done. Serial Hgb., WBC., and reticulocyte counts are recorded on Table I. Bleeding and clotting times were normal; clot retraction normal; fragility tests abnormal (see Table II); Coombs test, direct method—negative; Coombs

test, indirect method (refrigerated 24 hours) positive; Coombs test, indirect method (incubated 24 hours)—negative. The Coombs tests were repeated several times with identical results. Bone marrow studies were done, one prior to, one during, and one after cessation of ACTH therapy. The initial bone marrow showed a slight decrease in normoblastic activity with no evidence of leukemia or hemolytic anemia. A marked normoblastic response was observed during ACTH therapy followed by a decrease in activity after ACTH was discontinued. Blood smears on several occasions during her hospital stay revealed spherocytes.

During the first eight days the patient's anemia became more pronounced. Two transfusions with washed cells were attempted, one before and one while on ACTH. On each occasion before 50 c.c. of blood had been received the patient developed a severe anaphylactoid reaction. Because of the increasing severity of her clinical condition, anemia, inability to tolerate transfusion, as well as the uncertainty of diagnosis, liver 15u daily, folic acid 5 mg. daily and feosal 0.6 gm. daily were started. ACTH was also being given at this time. Response to therapy was definite but not dramatic, as shown on Table

TABLE II

Hemolysis				
	Begins		Complete	
1.	Test	.51%	.36%	1st Adm.
	Control	.48%	.27%	
2.	Test	.60%	incompl. hemol.	1st Adm.
	Control	.45%	.27%	
3.	Test	.51%	incompl. hemol.	2nd Adm.
	Control	.48%	incompl. hemol.	
4.	Test	.60%	.30% Pre	3rd Adm.
	Control	.45%	.33% Op.	
5.	Test	.57%	.30% Post	3rd Adm.
	Control	.45%	.30% Op.	

See Table I for dates tests were done

I. The patient was discharged to be followed closely in the clinic. She was again admitted after 22 days at home and repeat laboratory studies were essentially the same as the findings on the previous admission. Transfusion preceded by large doses of antihistaminics resulted in similar severe transfusion reaction. The patient was again discharged to be followed in the clinic where no change in her general condition was noted until the final admission date when she complained of cough, nasal congestion, "feverishness," and marked fatigue. At this time the patient was acutely ill with a definite icteric tint to her skin and sclerae. The spleen was palpable 2 fb below the costal margin as before. The uterus was now at the umbilicus. FH 148 in the LLQ. icterus index was 50u, Hgb. 6.0 gm.; hematocrit 18. The patient was placed in oxygen, given penicillin, and on the third day ACTH was started. The hematocrit dropped to a low of 11 on the 4th hospital day but rose to 24 in a period of 12 days while on ACTH and without transfusion. The diagnosis of congenital hemolytic anemia seemed tenable after the episode of icterus and on the 21st hospital day splenectomy was performed without difficulty. However, at operation two small accessory spleens were discovered and removed. 1000 c.c. of fresh whole blood was administered without reaction after the patient had reacted from the anesthetic. Recovery was uneventful and the patient's RBC. rose to 3,400,000, Hgb. 12.5 gm. at discharge. Three weeks after discharge the red count had reached 4,300,000, Hgb. 14.9 gm. Approximately 2½ months post-splenectomy the patient delivered at 8½ months a premature male without complication. The infant has shown no evidence of icterus, splenic enlargement, or spherocytosis.

DISCUSSION

It is important to determine the type of hemolytic anemia present before surgical treatment is considered, for in primary acquired hemolytic anemia splenectomy has resulted in complete remission in only 50% of the cases, whereas in congenital hemolytic anemia Welch and Dameshek¹³ report 100% remissions in 38 cases. This is in agreement with other authors.^{3, 4, 7, 12} The differential diagnosis of the hemolytic anemias has been aided by the introduction of the Coombs test and studies on RBC. survival time.^{7, 11} Boorman, Dodd, and Loutit¹¹ have demonstrated an erythrocyte-bound antibody in seven cases of acquired hemolytic anemia by the use of the Coombs test. The Coombs test, a "developing" or antiglobulin test, is performed by the addition of anti-human-globulin rabbit serum to the patient's washed red cells. Agglutination indicates the presence of an erythrocyte-bound antibody globulin and this is found in cases of acquired hemolytic anemia but rarely found in congenital hemolytic anemia. Studies

on red cell survival time have produced several important findings which aid in further understanding the fundamental pathological processes occurring in congenital vs. acquired hemolytic anemia.^{7, 9} Normal red cells transfused to patients with congenital hemolytic anemia were found to have a normal survival time of 120 days, but the red cell survival time is markedly reduced when normal cells are transfused to patients with acquired hemolytic anemia. Conversely, if red cells from patients with congenital hemolytic anemia are transfused into normal subjects their survival time is reduced, but if red cells from patients with acquired hemolytic anemia are transfused into normal subjects the red cell survival time is normal. These studies indicate a fundamental abnormality of the red cell in congenital hemolytic anemia and a fundamental systemic hemolytic mechanism possibly of splenic origin in patients with acquired hemolytic anemia. The value of the fragility test is variable and not entirely reliable.¹² Also, the absence of a clear family history of congenital hemolytic anemia makes the diagnosis more difficult.

In the case presented the problem of severe transfusion reaction represented a real and potential hazard particularly at term. ACTH did not prevent the patient's severe transfusion reactions but did appear to produce a dual beneficial effect: a favorable hemopoietic response as shown by bone marrow study was noted and the urinary urobilinogen was reduced to normal during ACTH therapy. After ACTH was discontinued the urobilinogen excretion again became increased indicating that while ACTH was given it apparently arrested the hemolytic process. It is possible that while on ACTH the production of spherocytes was reduced, which would then result in an absolute decrease in the number of fragile cells in the blood; thus diminished hemolysis could be accounted for by this mechanism.

SUMMARY

1. A patient with congenital hemolytic anemia is presented on whom splenectomy was performed while in the second trimester of pregnancy.
2. Recent laboratory diagnostic tests are discussed.
3. The use of ACTH resulted in a favorable but not dramatic response.

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AN ACCOUNT OF THE UROLOGICAL RESIDENCY AT MAINE MEDICAL CENTER

JOSEPH A. MARSHALL, M. D.*

The General Surgical Residency Training Program at the Maine Medical Center is divided into six-month periods devoted to the various surgical specialties and one year and a half to general surgery. The surgical specialties include Orthopedics, Neuro-Surgery, Pathology, Gynecology and Obstetrics, and Urology. The purpose of this brief paper is to present the organization and mechanics of the Urological Service and a review of procedures carried out by one of our residents during his tenure of service.

The Urological Service is composed of a chief, three urologists, a resident and an intern. Grand rounds and conference are held once weekly. The weekly outpatient clinic is supervised by a staff doctor; ten to twenty or thirty patients being seen at each clinic.

The duties of the resident include: (1) supervision of the intern's work; (2) routine management of ward patients including operative care with supervision; (3) responsibility for organization of conferences; (4) arranging of operative schedules; (5) supervision of all consultations; (6) and otherwise take over the administration of the service with the chief.

The list of procedures carried out by one of our urological residents during his tenure of service includes:

1. Transurethral Prostatectomies:
a—Indications being both benign hyperplasia and/or carcinoma

8
2. Retropubic Prostatectomies

7

3. Cystoscopy; Cystoscopy and Retrograde Pyelograms; Cystoscopy and Biopsy of Bladder Tumors; Cystoscopy and Cystograms

62
4. Suprapubic Prostatectomies — both with and without bilateral vasectomy

11
5. Hydrocelectomy

4
6. Bilateral and/or Unilateral Orchiectomy

14
7. Suprapubic Cystotomy

4
8. Amputation of Penis with Bilateral Radical Groin Dissection

1
9. Partial Cystectomy

2
10. Complete Cystectomy with Uretero-Sigmoid-Anastomosis

2
11. Repair of Complete Urethro-Vesical Rupture

1
12. Torek Operation for Undescended Testicles

2
13. Nephrectomy

8
14. First Assistant at Operative Procedures performed on private urological patients

156

The above procedures were performed by the urological resident under the supervision of the staff urologist. Other minor procedures such as circumcisions, dilatation of urethral strictures, some orchiectomies and a few hydrocelectomies were performed by the intern, assisted and instructed by the resident. I believe that the above statistics reveal that our residents receive a well-rounded urological foundation necessary for a general surgeon and that rotation of our residents through the Urological Service during their General Surgical Residency Training Program is time well spent.

*Resident in Urology, Maine Medical Center, Portland, Maine.

THE PRESIDENT'S PAGE

The Council has decided that our Centennial Meeting will be held in Portland, June 21, 22 and 23, 1953. Correspondence with State Medical Associations which have had hundredth anniversary meetings shows that we must plan for at least one-third larger attendance than at the usual annual session. The necessity of providing so many hotel rooms greatly limits the possible meeting places in Maine. We all enjoyed the friendly hospitality of The Samoset this year and there was obvious sentiment in favor of a return visit, even though their accommodations could not be stretched to meet next year's unusual needs. Results of the mail ballot decreed by the Centennial Committee showed 182 in favor of The Samoset and 297 voting in favor of Portland.

The keynote of the meeting will be 100 Years of Service. It is hoped that many of the celebrated physicians who have come from Maine may be secured as speakers. Morning clinics will be held at the Portland hospitals. There will be scientific and historical exhibits and you will hear more about them later. A special edition of the *Portland Sunday Telegram* will be devoted to our meeting.

The Eastland Hotel will be convention headquarters. The Eastland, Congress Square, Lafayette and Columbia Hotels will provide us with ample hotel rooms, all within a block of each other.

In spite of the increasing span of human life, centennials are still the event of a lifetime. I hope the great majority of our members will be able to find time from their duties to attend the 1953 Centennial of the Maine Medical Association.

EUGENE H. DRAKE, M. D.,
President, Maine Medical Association.

THE COUNCIL REPORTS

The House of Delegates of the Maine Medical Association, in session June 23, 1952, at Rockland, voted that a summary of transactions at each of the six council meetings held during the year be published in the JOURNAL. In accordance with this action, we will endeavor to give you the highlights of the first regular meeting for 1952-1953, which was held August 10th at the home of your President, Dr. Eugene H. Drake, in South Gorham.

The meeting was called to order at 3.55 P. M. by the Chairman of the Council, Dr. Robert W. Belknap. Present: Council members, Drs. Drake, Nickerson, Mahaney, Weymouth, Belknap, Larson, Albert; Chairman, Scientific Committee, Dr. C. Lawrence Holt; JOURNAL Editor, Dr. Thomas A. Foster; Executive Secretary, Mr. Payson; Secretary, Mrs. Kennard. Absent: Drs. Jameson, Vickers, Torrey.

Centennial Meeting in 1953

Dr. Drake, elsewhere in this issue of the JOURNAL, has told you about the decision to hold this meeting in Portland, June 21, 22 and 23, the reason for this decision, and some of the plans for the meeting. The major portion of the council meeting was spent discussing plans for this Centennial Celebration, which—after all—occurs only once every hundred years.

1952 Fall Clinical Session

The Council has accepted the Kennebec County Medical Association's invitation to hold the Fall Clinical Session of the Maine Medical Association in Waterville; the dates to be set later.

Watch your mail for a letter which will give you information such as dates, meeting places and preliminary program.

The program will be published in a later issue of the JOURNAL and will be all that is necessary to convince you that you should be present at this session, which members of the Kennebec County Association are arranging for your benefit.

Expenses of Out of State Delegates

The secretary stated that there is no specific amount set up to cover expenses of Out of State Delegates, particularly so far as travel expense is concerned. It was voted that delegates to Out of State meetings be paid five cents a mile for travel (round trip), plus their expenses for hotel and meals.

New England Diabetes Association Fair and Detection Campaign

It was voted to approve the Fair and Detection Campaign to be held at Horticultural Hall, Boston, November 14 and 15, and that the secretary so notify Dr. Albert A. Hornor, President, New England Diabetes Association.

Division of Maternal and Child Health, Obstetric-Pediatric Institute on Premature Care

It was voted to approve the Institute, which is to be held at Colby College in Waterville, September 12th, and that the Secretary so notify Dr. Ella Langer, Director, Division of Maternal and Child Health, Department of Health and Welfare, Augusta.

Woman's Auxiliary to the Maine Medical Association

The council, as the Advisory Committee to the Woman's Auxiliary, voted to endorse activities of the Woman's Auxiliary in obtaining information relative to the position and policy (concerning Public Health) of candidates for political office.

Duties of Standing Committees

The Executive Secretary reported that the duties of some of the Committees are not clearly defined. It was voted to appoint a Committee on Committees with instructions to define duties of Standing Committees. The President was instructed to appoint this committee.

The meeting was adjourned at 5.45 P. M.

YOUR NEW COUNCIL MEMBERS

In event you need any introduction to either of these members, who are now a part of your Official Family, we present — Dr. Karl V. Larson of East

Machias, Councilor for the Fifth District, and Dr. Armand Albert of Van Buren, Councilor for the Sixth District.



DR. LARSON



DR. ALBERT

1952 GOLF TOURNAMENT

The Golf Tournament at the 1952 annual session was a profound success and the interest shown in the awards presented was very gratifying to the donors and to your committee.

The entry list was the biggest yet and all were happy with their prizes.

Following is a list of the winners, their prizes and donors:

Dr. Martyn A. Vickers — 12 Golf Balls, Mead Johnson & Company.

Dr. Stephen A. Cobb — 8 Steak Knives, Maine Medical Association.

Dr. Lloyd Brown — Barometer, The P. J. Noyes Company.

Dr. John F. Dougherty — Trophy, Surgeons' & Physicians' Supply Co.

Dr. Kenneth J. Cuneo — Chipping Iron, Geo. C. Frye Co.

Dr. John F. Reynolds — Dopp Kit, E. F. Mahady Company.

Dr. Raymond A. Tougas — Cigarette Lighter, The Upjohn Company.

Dr. Wilbur B. Manter — Vibrometer, U. S. Vitamin Corporation.

Dr. Oakley A. Melendy — "Current Therapy," W. B. Saunders Company.

Dr. Harold E. Small — Golf Balls, Burroughs Wellcome & Co.

Dr. Carl A. Richards — Zipper Bag, Thomas W. Reed Co.

Dr. Thomas F. Fay — Bicillin, Wyeth Incorporated.

Dr. William R. McAdams — Cigarette Lighter and Onyx Ash Tray, Winthrop-Stearns, Inc.

Dr. George J. Robertson — Cigarette Lighter, Maine Medical Association.

Dr. Edmund N. Ervin — Cigarette Lighter, Maine Medical Association.

Dr. Charles W. Kinghorn — Golf Balls, The Wm. S. Merrell Company.

Dr. Russell Hager — Pill Case, The Zemmer Co.

Dr. Robert J. Barrett, Jr. — Golf Balls, DoHo Chemical Corporation.

Dr. Gerald C. Leary — Golf Balls, Maine Surgical Supply Co.

Dr. Kenneth W. Sewall — 100 Terramycin Tablets, Chas. Pfizer & Co., Inc.

Dr. Kinder — Golf Balls, Brewer & Company, Inc.

Dr. Moore — Golf Balls, Brewer & Company, Inc.

Dr. Seth H. Read — "Medical Emergencies,"
A. Davis & Company.

Dr. George L. Maltby — Cigarette Lighter, Maine
Medical Association.

Dr. Robert O. Kellogg — Tubex Case, Wyeth
Incorporated.

Dr. Francis A. Winchenbach — Golf Balls, M & R
Laboratories and Maine Surgical Supply Co.

Ladies

Miss Louise Trainor — Trophy, Surgeons' &
Physicians' Supply Co., and Wood Covers, Maine
Medical Association.

Mrs. Kenneth J. Cuneo — Philip Morris Cigarette
Chest, Philip Morris & Co., Inc.

Mrs. Thomas F. Fay — Electric Lantern, Maine
Medical Association.

Mrs. Leon Buck — Sterling Silver Shakers,

Michael Salvetti and Norma Pencil, Ciba Pharma-
ceutical Products, Inc.

Mrs. Kinder — Desk Set, The Borden Co.

Mrs. Robert L. Allen — Sterling Silver Shakers,
Geo. C. Frye Co.

Mrs. Robert O. Kellogg — Golf Balls, Picker
X-ray Corporation.

Mrs. Hager — Golf Balls, Picker X-ray Corpora-
tion.

Exhibitors

Mr. Leo Curran — Cigarette Lighter, Maine
Medical Association.

Mr. J. C. Hearn — Norma Pencil, Ciba Pharma-
ceutical Products, Inc.

Special Prize

Mr. W. Mayo Payson — Compliments of Mr.
N. G. Neilson.

DR. FRANCIS A. WINCHENBACH,
Chairman, Golf Tournament.

WOMAN'S AUXILIARY TO THE MAINE MEDICAL ASSOCIATION

141 Members Attend 4th Annual Meeting of the Woman's Auxiliary at The Samoset, Rockland, June 22, 23, 24, 1952

Mrs. Luther H. Kice, Parliamentarian of the
Woman's Auxiliary to the American Medical Asso-
ciation, and a Past President of that organization, was
the principal speaker at the General Session, Monday
afternoon, June 23rd. Mrs. Kice explained how the
Auxiliaries work for the future of America in and
with all other organized groups. The goal of all our
efforts is "to work together in behalf of humanity."

Dr. Louis H. Bauer, President of the American
Medical Association, and Dr. C. Harold Jameson,
President of the Maine Medical Association, were
present and both spoke briefly.

Other guests were Mrs. Thomas Reid, President of
the New Hampshire Auxiliary; Mrs. Stanley B.
Weld from Connecticut, and Mrs. Russell Hager
from Rhode Island, who were Delegates to the Maine
meeting.

Mrs. Clyde I. Swett of Island Falls, President of
the Auxiliary for 1951-1952, presided at the meeting.

The following Officers and Committee Chairmen
were elected for 1952-1953:

OFFICERS

President, Mrs. Philip B. Chase, Farmington.

President-elect, Mrs. Asa B. Adams, Orono.

Vice President, Mrs. Richard S. Hawkes, Portland.

Treasurer, Mrs. Linus J. Stitham, Dover-Fox-
croft.

Corresponding Secretary, Mrs. Maynard B. Colley,
Wilton.

CHAIRMEN OF STANDING COMMITTEES

Organization, Mrs. Clyde I. Swett, Island Falls.

Public Relations, Mrs. William L. MacVane, Jr.,
Portland.

Program, Mrs. Paul A. Millington, Camden.

Continued on page 294

EXECUTIVE SECRETARY'S REPORT*

1951 - 1952

Since this year of the Association's affairs (from June 1st, 1951, to June 1st, 1952) did not include any part of a Legislative Session we did not have those activities to cover. There were three matters which are the direct result of legislation in the 1951 Session that were of interest to members of this Association.

Increased funds being available through the sales tax, the appropriation for the fiscal year 1951-1952 for state aid to hospitals was increased to \$1,000,000, and for 1952-1953 to \$800,000. After certain conferences, the State Department of Health and Welfare issued the ruling that cases hospitalized where a doctor was to receive a fee for medical treatment should not be eligible for state aid. There was some disagreement.

The sales tax contained an exemption on "Sales of medicines sold on doctor's prescription." Mr. Locke and I had conferences with the Attorney General's Department and as liberal a construction of this exemption as the language permitted was obtained.

On eyeglasses for the correction of vision, also a favorable ruling was obtained: the materials themselves are taxable; however, "the gross receipts from such services are not taxable."

The Association has long been interested in changing the present law relating to the commitment of persons to mental hospitals. Members of the Legislative Committee have termed as barbarous the procedure whereby a legal complaint must be served on the patient, and a public hearing held, usually before the municipal officers of the town where the patient is found.

The officials of the Department of Institutional Service devised a redraft of this law which not only eliminated these objectionable proceedings but also deleted the word "insanity" and substituted "mental illness." I had some part in aiding, on your behalf, the passage of this bill in the last Legislature. The validity of the new law was attacked on the grounds that under it a person could be deprived of his liberty without due process of law; the medical theory that mental illnesses, like any other illness, was one of which only doctors were competent to judge, if not rejected, was at least subordinated to the proposition that a person cannot be deprived of his liberty without the opportunity of a formal hearing before some properly constituted tribunal. A careful study of this Supreme Court decision will determine whether there is any leeway within which desirable amendments may be made.

At its meeting in August the Public Relations Committee again endorsed the idea of a Grievance Committee for the Association, preferable under some other and more accurately descriptive title. Later the Council directed me to obtain information on this subject from other states and report back to it more fully on the subject.

When this subject had been a matter for consideration before, it had been discussed by the Committee for Revision of the Constitution and By-Laws. Most of the members of that Committee had been favorably inclined to such a Committee, but, upon representation of Mr. Locke that he feared an unfavorable increase in malpractice suits, the matter was dropped for the time.

Naturally, I felt that my task of drafting legislation looking to the creation of such a Committee should be worked out with Mr. Locke, so that any features which he felt objectionable should not be in the draft. He, as usual, was most coöperative and a rather voluminous correspondence resulted.

Finally, I went to Augusta, some time in September, and discussed the subject for two hours in Mr. Locke's office. We then went to his camp and had dinner and continued the discussion in the evening. The resulting draft embodies the features brought out in that correspondence and those discussions, and, while the language is mine, it was submitted to Mr. Locke before I gave it to the Council.

There is one amendment which Mr. Locke has submitted too recently to have appeared in any report. Mr. Locke urges that the sentence withholding jurisdiction from the Committee, on complaints founded on malpractice, until "finally determined by a court of competent jurisdiction" would in practice keep the Committee from ever considering such cases because they are usually not heard by the courts. He suggests that the phrase "until they are finally disposed of" be substituted.

This Association and the American Medical Association have long had an interest in some action which would lead to the strengthening and improving *local* public health services. Such services properly set up and confined to the recognized functions of public health, as contradistinguished from the field of the private practice of medicine, could be of great benefit to the people of this State.

The Health Council of Maine has had this matter under study, and I have served on a Committee on that study, trying to learn what revisions of health laws and administrative machinery were necessary, and to determine what health personnel could be available if funds were appropriated to that purpose. The work is in its very preliminary stage but I suggest it to you as one of the most worthwhile projects that this Association can interest itself in for the benefit of the public. It is obviously a matter which should not and cannot be put in operation without the coöperation, advice, and counsel of the doctors of Maine.

The Centennial Celebration Committee for 1953 has been set up and has already had two meetings. Some of the younger members may not remember that the Maine Medical Association was organized at Augusta, June 1st, 1853. Plans are already in the making for telling the high spots of 100 years in medicine in Maine.

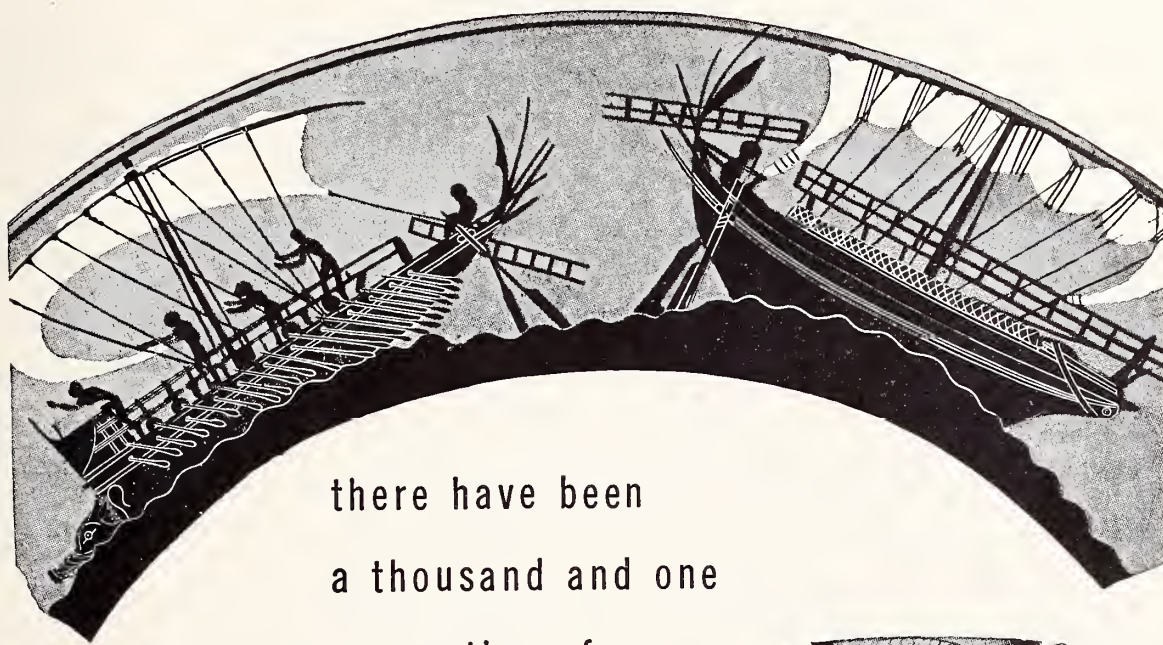
To turn from the official to the personal side of the work, to me, this has been a pleasant year. I have been privileged and invited to participate and advise in the whole work of the administration of the Association. I think Mrs. Kennard and I have attained a great deal of coöperation in what we feel is our common work; and, whether it is proper or not, I am going to congratulate you on having as your Acting Secretary-Treasurer a person who is not only thoroughly familiar with the affairs of the Association but one who has intelligently and untiringly carried on its work.

I wish to thank the officers of the Association, particularly President C. Harold Jameson, President-Elect Eugene H. Drake, and Council Chairman Norman H. Nickerson, for the kindly and helpful guidance they have given me in my work this year.

W. MAYO PAYSON,
Executive Secretary.

* Presented at the Annual Session of the Maine Medical Association, House of Delegates, June, 1952.

Ever since man went down
to the sea in ships



there have been
a thousand and one
suggestions for
the relief of
motion sickness.



War ship and merchant ship,
about 500 B. C.; from painted
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SEARLE RESEARCH IN THE SERVICE OF MEDICINE



COUNTY SOCIETIES

Androscoggin

President, Alcid F. DuMais, M. D., Lewiston
Secretary, Paul G. Lemaitre, M. D., Auburn

Aroostook

President, Clement L. Donahue, M. D., Caribou
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Thomas A. Martin, M. D., Portland
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Franklin

President, Wallace H. Duffy, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Silas A. Coffin, M. D., Bar Harbor
Secretary, Arthur M. Joost, Jr., M. D., Bucksport

Kennebec

President, Francis H. Sleeper, M. D., Augusta
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, Gilmore W. Soule, M. D., Rockland
Secretary, Robert L. Allen, M. D., Rockport

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President, John F. Dougherty, M. D., Bath
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President, Edward L. Reeves, M. D., Lewiston
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President, Linus J. Stitham, M. D., Dover-Foxcroft
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President, Ernest W. Stein, M. D., Pittsfield
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Washington

President, DaCosta F. Bennett, M. D., Lubec
Secretary, Karl V. Larson, M. D., East Machias

York

President, Kenneth J. Cuneo, M. D., Kennebunk
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Kennebec

A regular meeting of the Kennebec County Medical Association, held at the Augusta House, Augusta, Maine, May 15, 1952, began with dinner at 7.00 P. M. There were twenty-three members and guests present.

In the absence of President Sleeper, Vice President K. A. Sommerfeld presided at the business meeting. The record of the last meeting was read and approved.

Dr. Sommerfeld made reference to the circular letter which President Sleeper is sending to the members, relative to the matter of funds for medical schools. He suggested that the members give and register with the Secretary the fact of their gift.

Dr. Alta Ashley of Augusta was elected to membership.

Dr. Sommerfeld then introduced William V. Cox, M. D., of Lewiston, whose subject was *Treatment of Burns*. He briefly reviewed the old methods of treatment — use of oil; tannic acid and triple dye; outlined the difficulties and complications; mentioned the numerous factors to be considered such as the age of the patient, extent of the burns, respiratory involvement, control of shock (plasma, salt solution, glucose), consideration of the cause of the burn; objects of treatment—avoiding contamination, minimizing reinfection, drainage, immobilization; healing minimum time, minimum loss function—discussed chemotherapy, ACTH, antibiotics and their limitations; nutritional therapy.

Ross W. Green, M. D., of Auburn, was then introduced. He showed slides of cases treated and studied at the time of the Cocoanut Grove fire; he stressed the fact that the nutrition of the patient following burns cannot be over-emphasized. His discussion of the surgical phase of the treatment—use of fluids, nutritional level that must be maintained, especially vitamins, and use of plasma and whole blood, with the illustrations, was particularly clear.

A clear and interesting presentation by both.

A. H. MORRELL, M. D.,
Secretary.

Deceased

Martin C. Maddan, M. D., Old Town, Honorary Member, Penobscot County Medical Society, August 11, 1952.

George H. Rand, M. D., Livermore Falls, Honorary Member, Androscoggin County Medical Society, August 3, 1952.

Ray N. Randall, M. D., Lewiston, Senior Member, Androscoggin County Medical Society, August 11, 1952.

NEWS AND NOTES

State of Maine Board of Registration of Medicine

Adam P. Leighton, M. D., 192 State Street, Portland, Maine,
Secretary.

List of physicians licensed in the State of Maine — July 9,
1952.

Through Examination

- Dr. Marcus M. Gulley, East Boothbay, Maine.
Dr. Neil K. MacLellan, 63 Henry St., Halifax, N. S.
Dr. Currier McEwen, Palisades Ave. and 255th St., Riverdale, Bronx, N. Y.
Dr. Isaac Nelson, Greenville, Maine.

Through Reciprocity and Endorsement

- Dr. Eben T. Bennet, 49 Deering St., Portland, Maine.
Dr. David W. Bishop, U. S. Marine Hospital, Portland, Maine.
Dr. Anthony D. Bower, corner Cumberland St. and Union Ave., Brunswick, Maine.
Dr. Newton C. Browder, 520 Commonwealth Ave., Boston 15, Mass.
Dr. James C. DeWitt, 282 South Main St., Brewer, Maine.
Dr. Andrew Fergus, Utterback's Hospital, Kenduskeag Ave., Bangor, Maine.
Dr. Clarence C. Garrett, 1209 Medical Arts Bldg., Fort Worth, Texas.
Dr. Robert W. Hanisch, Box 201, Limestone, Maine.
Dr. Clifford W. Gates, Flaggy Meadow Rd., Gorham, Maine.
Dr. John F. Hughes, Dixfield, Maine.
Dr. William C. Meloy, Bailey Island, Maine.
Dr. Alice M. North, Castine, Maine.
Dr. Albert A. Poulin, Jr., Town Landing Rd., Falmouth Foreside, Maine.
Dr. William F. Taylor, Maine General Hospital, Portland, Maine.
Dr. Myron J. Towle, Fort Fairfield, Maine.

New England Tuberculosis Conference

American Trudeau Society members in Maine have planned a special medical program to be held September 25 in connection with the New England Tuberculosis Conference which will be held in Portland at the Eastland Hotel, September 24-26.

A morning session commencing at 9 a. m. will include the following programs:

- "Medical Aspects of Current Therapy in Tuberculosis."
Gordon W. Meade, M. D., Medical Director, Trudeau Sanatorium, Trudeau, N. Y.
"Surgical Approach in the Treatment of Tuberculosis."
Otto C. Brantigan, M. D., Baltimore, Maryland.
"The Practical Application of Pulmonary Function Tests."
Edward A. Gaensler, M. D., Assistant Visiting Surgeon, thoracic surgery, and Research Fellow in Medicine, Thorndike Memorial Laboratory, Boston City Hospital.

Opportunity for discussion will be provided following these presentations.

Arrangements for a physicians' luncheon at the hotel are being made. Later, in a session scheduled for 2 p. m., a clinical X-ray conference is planned, with the members of the morning panel serving as a board of experts, and providing physicians attending with opportunity to present unusual and interesting films for discussion and diagnosis.

Physicians are invited to attend all sessions of the Conference which will commence with luncheon on the 24th and conclude following lunch on the 26th. Membership in the Conference consists of interest and attendance.

Observations Relating to the Use of Gamma Globulin In Prevention of Paralytic Poliomyelitis

Whether gamma globulin will be effective in the prevention of paralytic poliomyelitis is not now known. On the basis of animal experiments and preliminary study on humans, it is possible that globulin will have value in human poliomyelitis, but serious questions remain to be answered before such a hope can be substantiated. Nevertheless, public dissemination of information on the status and objectives of current studies, incompletely presented or misunderstood has created a serious demand for gamma globulin which cannot be met.

Virtually the entire output at current production rates is required to meet the demand for prevention or modification of the course of measles and infectious hepatitis.

Under the circumstances, it is obvious that the existing limited supply and current production of gamma globulin should be reserved for use in these diseases in which its efficacy has been established.

Obstetric-Pediatric Institute on Premature Care Colby College, Waterville, September 12th

The Division of Maternal and Child Health, State of Maine Department of Health and Welfare, will conduct a one-day Obstetric-Pediatric Institute on Premature Care at Colby College, Waterville, Maine, September 12, 1952.

Copy of the program for the Institute will be mailed to members of the Maine Medical Association in the near future.

ELLA LANGER, M. D., *Director,*
Division of Maternal and Child Health.

Fiske Fund Prize Dissertation

The Trustees of the Caleb Fiske Fund of the Rhode Island Medical Society announce the following subject for the prize dissertation of 1952.

"THE PRESENT STATUS OF ANTI-COAGULANT THERAPY"

For the best dissertation a prize of \$200 is offered. Dissertations must be submitted by December 1, 1952, with a motto thereon, and with it a sealed envelope bearing the same motto inscribed on the outside, with the name and address of the author within. The successful author will also agree to read his paper before the Rhode Island Medical Society at its Annual Meeting on May 7, 1953. Copy must be type-written, double spaced, and should not exceed 10,000 words. For further information write the Rhode Island Medical Society, 106 Francis Street, Providence 3, R. I.

Announcement of Van Meter Prize Award

The American Goiter Association again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association, which will be held in Chicago, Illinois, May 7, 8 and 9, 1953, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy in duplicate sent to the Corresponding Secretary, Dr. George C. Shivers, 100 East Saint Vrain Street, Colorado Springs, Colorado, not later than February 15, 1953. The committee who will review the manuscripts is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for the presentation of the Prize Award Essay by the author, if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association.

Roscoe B. Jackson Memorial Laboratory Receives Grant

The Roscoe B. Jackson Memorial Laboratory, of Bar Harbor, Maine, has received a \$5,000.00 renewal grant, effective July 1, 1952, from Playtex Park Research Institute for a continuation of studies by Dr. Paul Sawin of "Mice and Rabbits With Neuromuscular Abnormalities." The research program supported by the Institute will have a bearing on the problems of such diseases as multiple sclerosis and other neuromuscular disturbances which occur in children.

National Association for Music Therapy

The National Association for Music Therapy will hold its third annual meeting in Topeka, Kansas, October 30, 31 and November 1st, 1952, in the Hotel Kansan. Applications for active, associate or student membership may be made to Mrs. H. Dierks, 5050 Oak Street, Kansas City 2, Missouri. Members of the medical or musical professions, who are not members may attend meetings by paying a registration fee of \$5.00.

Hospitals Willing to Accept Polio Cases

The following hospitals have indicated willingness to accept polio cases:

Augusta General Hospital (emergency base)
Central Maine General Hospital
Eastern Maine General Hospital
Franklin County Memorial Hospital (diagnosis)
Madigan Memorial Hospital
Maine General Hospital
Mercy Hospital (4 cases)
Miles Memorial Hospital (First 24 hours only)
Milliken Memorial Hospital
Mount Desert Island Hospital (diagnosis only)
Rumford Community Hospital (diagnosis only)
Sisters' Hospital
Thayer Hospital
Webber Hospital

Additions to this list will be published in the near future, also a list of respirators, and hot pack machines.

Woman's Auxiliary—Continued from page 289

Press and Publicity, Mrs. Frank W. Barden, Kennebunk.

Bulletin, Mrs. Clement L. Donahue, Caribou.

Today's Health, Mrs. Vincent H. Beeaker, Lewiston.

Publication, Mrs. Edward W. Holland, Springvale.

Revisions, Mrs. Ralph A. Goodwin, Sr., Auburn.

Necrology, Mrs. Clark F. Miller, Auburn.

Health Council, Mrs. James N. Shippee, Winthrop.

Civil Defense, Mrs. Harold E. Small, Augusta.

Legislation, Mrs. Merrill S. F. Greene, Lewiston.

THE OBJECTS OF THE WOMAN'S AUXILIARY TO THE MAINE MEDICAL ASSOCIATION

To extend the aims of the medical profession to all organizations which look to the advancement of health and health education;

To cultivate friendly relations and promote mutual understanding among physicians' families;

To participate in any endeavor on the request of the American Medical Association;

To coördinate and advise concerning the activities of the Maine Medical Association.



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Maine General Hospital, Portland, Maine, Thursdays, 10.00-11.00 A. M., Joseph E. Porter, M. D., Director.

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Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

Department of Health and Welfare Division of Maternal and Child Health (Including Services for Crippled Children) Clinic Schedule — 1952

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: July 14, Aug. 11, Sept. 8, Oct. 13, Nov. 3, Dec. 8.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: July 18, Aug. 15, Sept. 19, Oct. 17, Nov. 14, Dec. 12.

Rumford — Community Hospital, 1.30-3.00 p. m.: Sept. 17, Dec. 17.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Aug. 28, Oct. 23, Dec. 18.

Rockland — Knox County Hospital, 1.30-3.00 p. m.: Aug. 21, Nov. 13.

Machias — Normal School, 1.30-3.00 p. m.: Aug. 13, Oct. 8, Dec. 10.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.—1.00-3.00 p. m.: July 9, Sept. 9, Nov. 5.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: July 8, Nov. 4.

Fort Kent — Normal School, 10.00-1.00 p. m.: Sept. 10.

Bangor — Eastern Maine General Hospital, 1.30-3.00 p. m.: July 24, Sept. 25, Nov. 20.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

HARD-OF-HEARING CLINICS

Waterville — Thayer Hospital, 1.30-3.30 p. m.: Sept. 3, Dec. 3.

PEDIATRIC CLINICS

Bangor — Eastern Maine General Hospital, 1.30 p. m.: July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

Waterville — Thayer Hospital, 1.30 p. m.: July 1, Aug. 5, Sept. 2, Oct. 7, Nov. 4, Dec. 2.

Presque Isle — Northern Maine Sanatorium, 1.30 p. m.: July 23, Sept. 24, Nov. 19.

By Appointment Only

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From where I sit
by Joe Marsh

How Nervy Can a "Tenant" Get?

"Harry the Hermit" dropped in to see Judge Cunningham the other day and started complaining about that old dilapidated house he lives in over near Greenwood Lake.

"Who's my landlord?" Harry wanted to know. "Whoever you pay rent to," says the Judge. "Don't pay any rent," says Harry. "Moved into that house twelve years ago and nobody ever came to collect."

"Well," says the Judge, looking mystified, "what do you have to complain about?" "Plenty," replies Harry. "Rain's pouring in my living room and if someone doesn't fix that roof, I'm moving out!"

Now Harry was only having a little joke, but from where I sit I've seen people act about as nervy as this sometimes—seriously. Like those who enjoy all the rights Americans have worked for, and yet would take away some of those freedoms from others—for example, our right to enjoy a friendly glass of beer or our right to practice our profession without interference.

Joe Marsh

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Of course there is no sure way to know when to buy securities at exactly the price level to guarantee a capital gain. As to what the future market prices may be is something beyond human ability to accurately foretell.

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The Journal of the Maine Medical Association

Volume Forty-Three

Portland, Maine, September, 1952

No. 9

MAKING THE MOST OF MAN*

WILLIAM B. TERHUNE, M. D., New Canaan, Connecticut**

Throughout the world, physicians labor to serve humanity. The doctor's job is to MAKE THE MOST OF MAN—physically, mentally and spiritually. Man's greatest wastage is due to his mental difficulties. Eighty per cent of the human race, sometime during their lives, suffer from serious emotional disorders and many operate under this handicap much of their lives. Forty per cent of the population, at any given time, is markedly inefficient, suffering from some psychiatric disorder such as: psychosomatic disturbances, psychoneuroses, character neuroses, escapism including alcoholism and sedative drugs, marital maladjustments, major sex difficulties, or antisocial conduct.

Medicine, a solid dependable science, gives human beings greater security—the knowledge that, with God's help and ours, they may aspire to a better life. Medicine has accomplished miracles; today it advances on a new frontier, the largely uncharted region of mental disorders. Formerly a No Man's Land, little understood and unnecessarily dreaded, today Every Man's Land is a region of medical opportunity. No longer will this area be at the mercy of marauding charlatans who prey upon the fears of the unfortunate. And there are thousands of these char-

latans and crackpots such as untrained, so-called psychologists, faddists and irresponsible physicians. To accomplish this we must educate, legislate and activate a successful mental health program. The doctors are ready and medicine affirms to the people of the world: "Your health can be improved 50% and we intend to do it." We have remembered The Forgotten Man and know his address: c/o The State Hospitals—with new emphasis and meaning on that word CARE.

Few state hospitals have programs of intensive treatment comparable to that of progressive private mental hospitals. Even though our state mental hospitals are the best in the world, they are largely custodial. Eighty per cent of psychiatric patients can be returned to usefulness through intensive psychiatric treatment. It is our job to provide the readily available means to treat, and cure, these hundreds of thousands of sick people. The world shudders when it hears of a few thousand prisoners of war; today five million people in this country alone are Prisoners of Emotional Disorders, 700,000 of them in state hospitals. Unless we act, in a few years there will be a million in state hospitals—Prisoners of Emotional Disorders—victims of the strains of society; people who could not pay the Income Tax of Civilization.

Facts of Mental Health

Mental health can be purchased through money, effort, interest and leadership. This situation affects

* Delivered at the Annual Meeting of the Maine Medical Association, Rockland, Maine, June 24, 1952.

** Medical Director, The Silver Hill Foundation for the Treatment of the Psychoneuroses, New Canaan, Connecticut. Associate Clinical Professor of Psychiatry, Yale University Medical School.

all of us—our children and grandchildren. Well-to-do people afflicted with mental illness have until now easily secured the best medical treatment. This situation is changing: we live in an economic revolution—our children, grandchildren, and even ourselves, will probably need to be treated in “the state hospitals.” We need to arrange adequate treatment so that we do not stay there any longer than we have to!

War is lunacy and all who take part in it become paranoid to a degree, suffering from mass hysteria and anxiety. A psychosis exists when the individual retreats from reality. In war, similarly, the people refuse to face the reality that war is an unintelligent procedure in which even the victor loses. It is not my purpose to discuss the social forms of mental disease but merely to point out the seriousness of such states and suggest what we can do to alleviate them.

Today we are spending billions of dollars on military preparedness; so far as MAKING THE MOST OF MAN is concerned, it is money, resources and life thrown away. It is contrary to everything medicine stands for. If we spent half of this money to stabilize individuals, war might be obliterated. At least military preparedness never has worked. Why not try Universal Mental Hygiene?

Insanity, or more properly the psychoses, is not the major problem. Only six per cent of the people have a psychosis in the course of a lifetime. There are more hospital beds for psychotic patients than the total number of all beds in general hospitals but this is because patients remain too long in state mental hospitals.

Medical science promises coming generations a healthier and happier life. To accomplish this we doctors must assume leadership and call on the people to assist in conquering mental disorders. This can be the outstanding contribution of the last half of the Twentieth Century, the Century of Man's Emancipation from the Fear of Disease—not merely the “Century of Technology” but the “Century of Humanity!”

Advances In Treatment

Remarkable progress has occurred in psychiatry in the last fifty years and miraculous advances in the last decade. More has been done to help the mentally ill in this generation than was accomplished in the preceding two thousand years. Hundreds of thousands of people are restored to usefulness annually and at least a million helped. Millions more *can* be helped. Although still short of adequately trained physicians, psychiatry is the third largest specialty in the United States. It is to be hoped that soon all physicians will be as well oriented in this subject as they are in internal medicine. Medicine and psychiatry cannot be separated—the disorders of the mind are the problems of medicine. People need psychi-

atric help from all doctors. You have a good relationship with them and you can accomplish in a short time what it would take a psychiatrist months to effect. Thus physicians must be prepared to administer psychological first aid. Psychiatry is not a hard science to master—it is an easy one—come master it with us. We do not want to keep it for our own—we must share it—the job is too big for us alone. And, what is more, only when medicine works with us will we have truly good psychiatry!

(A) The most spectacular accomplishments in the past decade result from organic treatment. Electroconvulsive therapy relieves thousands with serious affective disorders; it has lowered the suicide rate and saved many lives. Insulin therapy restores thousands of young people to usefulness and relieves the anxiety-tensions of older patients. For the first time in history, medicine holds out hope to those who suffer from schizophrenia. No longer does the term “dementia praecox” connote horror. These and other forms of organic treatment too numerous to mention, materially decrease the great horde of “back-ward” patients, people whom, because formerly nothing could be done for them, one preferred not to think about.

Psychosurgery is accomplishing miracles even though its benefits are available to relatively few patients. Many heretofore hopelessly ill individuals suffering from chronic affective disorders, paranoid processes, agitated schizophrenic and chronic paranoid reactions have been relieved and able to resume a place in the community, many of them to carry on gainful occupations.

There is promise that other organic approaches will bring greater progress in psychiatry soon!

(B) Psychotherapy is immensely useful not only in the treatment of the neuroses but in the stabilization of individuals who have been afflicted with psychoses. It is hoped that in the near future state hospitals will have personnel and funds to institute large-scale psychotherapeutic procedures similar to those successfully carried out in private hospitals. That will be a great day for humanity: state institutions will become true hospitals. Patients will enter willingly, ask for assistance, confident of receiving it. Psychotherapy, the oldest medical practice, has become a scientific, precise, dynamically oriented science. Advances in organic psychiatry in no way reduce the importance of psychotherapy; organic procedures and psychotherapy are integral parts of eclectic psychiatry.

(C) Successful scientific research in the field of psychiatry has only taken place in the past ten years but today a vigorous program of supervised and coordinated research goes on. Every state hospital should have a biochemical laboratory with a corps of competent, trained workers, their findings coordi-

nated with other investigators. The existing laboratories in most state hospitals are pitifully inadequate. People today would not go to a 300 bed general hospital that did not have a good laboratory, yet not many 3000 bed mental hospitals have an equally good laboratory.

The United States Public Health Service with its active mental health program spends millions of dollars organizing, carrying on research work, and preparing educational material.

Some State Departments of Health have divisions of mental health which render outstanding service through education, operating clinics and supervising psychiatric treatment. We should expect every State Department of Health to institute such a unit at once. It costs little compared to what it saves.

Much of the money heretofore spent on the care of psychiatric patients has been thrown down a well. We increased custodial facilities, built more buildings and still more buildings, where patients languished with an increasing sense of hopelessness. Very few mental patients are dangerous; therefore, we need little increase in custodial facilities. Many are a nuisance so the public truly *puts them away* and forgets them, an *expensive* and *cruel* type of forgetting. We need psychiatric facilities in the community—not hidden in the backwoods.

I speak of medicine's powerful ally—The American Psychiatric Association. It is the oldest medical society in this country with 7,000 members. Half of them are seasoned young people, not tired old men. So, as the Greeks said: Half are the "age for mature deliberation" and half possess the "vitality and imagination of the young." The work of the Association is carried on by twenty-seven strong committees serving all fields of psychiatry, supervised and implemented by the Council. The work of the APA is similar to that of the American College of Physicians or the American College of Surgeons. It has established standards for state and private hospitals and rates them through its Central Inspection Board. It was instrumental in forming the American Board of Neurology and Psychiatry. It guides psychiatric education in medical schools. It conducts Mental Hospital Institutes and Institutes on Psychiatric Medical Education. The members of the Association, aware of their responsibilities, stand ready to be of assistance to their brother physicians. While you have little opportunity for taking part in their deliberations, I suggest you participate in the Psychiatric Section of the AMA where psychiatrists and other physicians work together to understand and solve one another's problems.

Program For State Medical Societies

I realize that this sounds like an exhortation but if so, it is enthusiasm based on the fact that psychiatry

is beginning to deliver the goods. I know I am a missionary but for thirty years I have seen suffering and wastage which need not be.

We are proud that you have accepted us as a part of medicine. We have felt like "fringes" for so long; forgive us if we are a little too cocky. All I have outlined will be accomplished so—"Eventually, why not now?" We are ready. All we need is to join hands.

You may ask what suggestions I have to place before the members of a state medical association. The physicians of Maine are rendering outstanding service to the psychiatric patients in this state and your state hospitals measure up to any in the country. I see here tonight distinguished members of the psychiatric profession who have for years been active in the advance of psychiatry. They are too numerous to mention and I know you and the people of this state are grateful to them.

I suggest the following program for a State Medical Society:

(1) *A Mental Health Committee* for every state medical society, consisting of seven influential physicians, only two of whom are psychiatrists. This Committee to study the needs of the state's psychiatric facilities, to make and implement recommendations to the Council. This opens an avenue of approach to the entire profession to secure their interest and assistance. Such a committee in Connecticut has done much for psychiatry in that state.

(2) The members of the society to take a sustained, active part in the *State Mental Hygiene Society*. Such an organization is a necessity if medicine is to have the support of the public. Where no such society exists or is inactive, we need to activate it.

(3) *The Women's Auxiliary* should have a Mental Health Committee which supports the mental health program of the state society. Doctors' wives are important people in a community. They are more unselfish than doctors; they have to be if they are doctors' wives. Give them the job of sparking this development.

(4) The establishment of *psychiatric facilities in general hospitals*. Eliminate the medieval idea that general hospitals cannot care temporarily for mentally ill patients. Every general hospital has at all times a large number of psychiatric patients, the nature of whose difficulties is not recognized. *We do not need more beds in state hospitals; we need more beds in general hospitals*. If we had facilities in general hospitals for the early treatment of psychiatric disorders, thousands of patients would not be sent to state institutions. The people should be alerted to this fact and insist that the community hospitals provide these facilities. *Psychiatric wards in general hospitals* are one of the best health investments society can make.

(5) There must be more *community psychiatric clinics*. The state medical society might request that the state appropriate funds for the operation of a sufficient number of these clinics, particularly for children. By treating emotionally disturbed children, of whom there are a great number, medicine strikes at the very source of its problem.

(6) *An intensive treatment program for state mental hospitals*. One way of effecting this is to follow up the patients you send to the state hospitals. Visit them; show them you are interested, and consult with their doctors. The doctors isolated in state hospitals feel ignored. Invite them to your deliberations; see that they have a place on your program and make them aware that you consider them an important part of a state medical program. With this encouragement more outstanding physicians will be attracted to a field where they are badly needed.

I could go on with similar suggestions such as acquainting politicians with the importance of mental health, graphically explaining that a mental health program is a good political move. There are outstanding examples: Minnesota, for instance, illustrated how popular a state mental health program can become. The people are willing to vote the money for improving mental health and a wise politician can be made to recognize that his leadership in the state can be strengthened by promoting a program of psychiatric treatment rather than custodial care.

There should be a Mental Hospital Day when annually the doors of the hospitals are thrown open and everything possible done to persuade the public to visit every nook and corner of *their* hospitals. We doctors have nothing to hide: if the hospitals are poor, it is the public's fault. We have no desire to startle the lay world with horror, for such an ap-

proach accomplishes no lasting good. But fundamentally, human beings love one another; give them a chance to employ that love in helping others and no longer will they project their self-hate so destructively.

There is one important thing each doctor can do. He can teach his patients personal mental hygiene. Through daily contacts, example and precept, help them to increase their skill in living. Patients need and want this.

In closing I would like to say: "What if no one cared?" The psychiatric patient's greatest handicap is a feeling that no one cares or understands. A few years ago a woman, held prisoner in the Russian Embassy in the United States, felt her situation to be hopeless. A young woman living in a small town near New York, shocked by this situation, first thought that she could do nothing. Then came the realization that the majority of people felt the same way, a desire to do something but impotent and helpless. She said, "What if no one cared? As unknown and inconsequential as I am, I shall do everything within my power to arouse the people of this country to help this woman." Largely through her efforts the radio commentators began to discuss this shameful situation and take up the cudgels in her behalf. The woman, incarcerated in the Russian Embassy, hearing on the radio that others did care and stood ready to help her, took hope, determined to escape—and leaped from the window. Hundreds of thousands of patients handicapped by psychiatric difficulties could be similarly stimulated and inspired to regain their health, if they were sure of our help. Let us demonstrate to them that we *do* care and that we will stop at nothing to effect their rehabilitation.

Standards For Indigent Care

The Committee on Indigent Care of the AMA's Council on Medical Service has outlined the following criteria for developing indigent medical care plans. The Committee believes that indigent medical care plans should provide all the services which normally are available locally to other citizens, and should make equal services available to all indigent persons—the blind, old age pensioners, dependent children. Also, the Committee feels that such a plan should provide for medical supervision and, wherever possible, offer a free choice of physician for both home and office care. The plan should use existing facilities, avoid duplication and provide for local administration by a single agency of the medical program for all groups concerned.

The Committee believes that medical care for the indigent is a local problem requiring the wholehearted

coöperation and participation of local physicians. Such plans should be administered locally regardless of the source of funds.

Hospital Rating Office Opens For Business

Director Edwin L. Crosby, M. D., former superintendent of Johns Hopkins Hospital, Baltimore, opened the new Joint Commission on Accreditation of Hospitals office September 1 at 660 Rush Street, Chicago. The Commission, with representatives from the American Hospital Association, the American College of Surgeons, the American College of Physicians, the Canadian Medical Association and the American Medical Association, will assume responsibility for the hospital standardization program formerly carried out by the American College of Surgeons. The Commission's program will get under way early this fall.

THE VALUE OF ADRENOCORTICOTROPIC HORMONE IN HERPES ZOSTER OPHTHALMACUS

JAMES E. POULIN, M. D., Sisters' Hospital, Waterville, Maine

A discussion of herpes zoster ophthalmicus is almost endless in its scope and therefore, this paper will be limited to evaluating the various forms of treatment with special reference to ACTH, the true miracle drug of modern medicine. Herpes zoster ophthalmicus presents an interesting and perplexing problem. Although the disease was known to physicians of antiquity, their ideas concerning it were obscure. They described in considerable detail characteristics of the disease, but its etiology remained a mystery through the years. It was not until 1861 that the disorder was discovered to be associated with the course of nerves and their branches.

It is now generally accepted that this clinical syndrome is the result of an inflammation affecting the ganglion, posterior routes, and the cranial nerves, resulting from an invasion of a filterable virus, which, as yet, has not been isolated. The chief site of this infection appears to be in the Gasserian Ganglion. The disease itself is comparatively rare, and yet in about one-half of the cases of herpes zoster of the trigeminal nerve, ocular complications develop. It is these ocular complications and their sequelae that cause the ophthalmologist a great deal of worry because only too often this disease produces permanent damage to the various structures of the eye. These complications may be observed in the various phases of herpes zoster, from the first day of onset to even months after healing of all cutaneous lesions. The most dangerous complication is the extension of the process to the globe of the eye. When this occurs, there results a disturbance of the transparent media, the iris, the sclera, the cornea, or the muscles. It is not uncommon for a secondary glaucoma to develop months after the original infection has subsided.

Cases of sympathetic ophthalmitis have been recorded following this condition. These serious complications serve to remind us that every case of herpes zoster ophthalmicus is potentially dangerous and must be treated as such.

The exact etiology of the herpes zoster problem has never been solved in that the causative organism cannot be isolated and thus the treatment of the disease varies greatly throughout the country. Every physician seems to have his own symptomatic method of treatment, which, he believes, shortens the course of the disease. The usual treatment has consisted chiefly of applying ointment to the local skin lesion, pituitrin injections, roentgen rays, small-pox vaccines and foreign proteins. For many years, pituitrin was the accepted therapy and reference to it is found

in almost every textbook of ophthalmology. It was always given as a last resort and yet the literature fails to reveal a single instance of it being used successfully.

In 1900, Campbell and Head carried out a very enthusiastic study of seventeen cases and they found that in all cases, there were hemorrhages in the posterior route ganglion, usually small and surrounded by considerable inflammatory exudate. Where herpes zoster affected the area supplied by the ophthalmic division of the fifth nerve, all showed the lesions to be in the Gasserian ganglion. This established fact prompted the use of the X-ray therapy which was not attempted until recent years. The users of deep X-ray therapy were most enthusiastic about their results. I have had occasion to use this method of treatment on three cases and I cannot share their enthusiasm. It is interesting to note that this form of therapy is no longer in vogue.

There has appeared in literature a great deal of discussion relative to the association of herpes zoster and varicella. The fact that the lesions of herpes zoster were not unlike those characterized by vesicular eruptions, such as small-pox and chicken pox, causes investigators to believe that these conditions were associated. Experimental evidence is not as yet forthcoming to prove their relationship. In spite of this fact, small-pox vaccine was used as a form of therapy in the treatment of this disease by some outstanding men, who felt that it was most efficacious in relieving both the subjective and objective phases of the disease. In recent years, this mode of therapy has faded into the background as would be suspected when a specific medicine is given for a nonspecific disease.

In more recent times, several interesting new treatments have been suggested for herpes zoster; namely, convalescent serum, typhoid vaccine, and diphtheria antitoxin. Excellent reports have been made on all of them. It is possible that all of these depend on the foreign protein element for their benefit. Foreign protein therapy has been an accepted form of therapy for several years, but it seems that its action and the real reason for its success is not well understood. It is amazing how any irritation of the eye, regardless of the cause, is helped by foreign protein. It is only natural that convalescent serum would be given a trial in the treatment of herpes zoster, especially since it has been established with reasonable certainty that the disease is a communicable virus infection which confers a lasting immunity.

This particular therapy has not been too popular and, I feel, that lack of popularity has been due to the fact that the serum itself has been very difficult to obtain, and this is the very reason why I have had no experience with this form of therapy. Typhoid vaccine is undoubtedly one of the best foreign proteins and I have used it on numerous cases with varying degrees of success. In cases of herpes zoster, I cannot honestly state that it has ever altered the course of the disease in my experience.

It would be difficult to say just what suggested the many and varied forms of therapy for the treatment of herpes zoster ophthalmicus. This is especially so when it comes to the use of diphtheria antitoxin as a specific form of treatment. None of the articles which I have read give any idea as to why diphtheria antitoxin was ever used as a form of treatment. Perhaps diphtheria antitoxin was chosen because very often it will work miracles on a non-diphtheretic sore throat. The users of diphtheria antitoxin feel that the success of the drug is the result of a compliment antibody fixation. Since it is impossible to prove a rationale for the use of a drug in this specific disease, its use has been restricted to a limited group of workers.

With the advent of modern chemotherapy and antibiotics, all of the aforementioned forms of therapy have been abandoned and in their place some one of the so-called miracle drugs of our modern laboratories have been submitted. For some unknown reason, I have been very fortunate in that I have seen a rather large number of cases of herpes zoster ophthalmicus during the past few years, thus I feel that I have had an excellent opportunity to evaluate the newer drugs. The sulfonamides came on the scene first and these were used in a series of four patients. This treatment proved to be a great disappointment because the usual dramatic effect of a sulfonamide failed in this disease. When penicillin therapy became available, I naturally was eager to test its effectiveness and accordingly, I gave it in a series of three cases and once again herpes remained a problem, because the course of the disease did not appear to be altered by the drug. During the past years, numerous authors have recorded successful treatment of the disease with Aureomycin. Finland, Rosenberg, and Benedek have reported cases in which they felt that Aureomycin is the drug of choice and that it is most effective against the virus. I have used this antibiotic on two occasions; the first case responded so well that I felt that the therapeutic value of Aureomycin in this disease was beyond any doubt. Thus when the second case presented itself, I confidently gave adequate amounts of Aureomycin and expected a rapid termination of the disease. This case soon proved to be the exception and the progress of the disease increased in severity in spite of all pre-

cautions; and the much dreaded corneal complications became evident. These ulcerated corneal lesions appeared and on the following day a true iridic inflammation developed with pain, redness, and myosis. It was at this very time that ACTH became available and I turned to it in desperation and, needless to say, the results were extremely gratifying. After two days of therapy, the improvement in the eye was dramatic and the lesion seemed to heal as if by magic. A dangerous eye now had become quiescent in two days therapy.

Within the next six months following this case I had occasion to observe two more cases of herpes zoster. Both of these cases had been placed upon penicillin therapy by another physician, and strangely enough both developed ocular complications after the acute phase of the cutaneous lesions. The first of these two cases showed multiple corneal vesicles, some of which were accompanied with deep corneal infiltrates. Desirous of determining the effectiveness of Cortisone, I immediately placed the patient upon large doses of Cortisone, administering the drug topically and systemically. Intensive Cortisone therapy was maintained for four days, and at the end of this time it became evident that the infection was not going to respond to Cortisone, for some of the deep corneal infiltrates had undergone a purulent degeneration. At this point, Cortisone was discontinued and ACTH was substituted; twenty-five mgms. were given every six hours. Within twenty-four hours the infectious process had abated, and from that point on the cornea healed very rapidly under ACTH, which treatment was maintained for five days.

The last case which I will report concerns a man who developed ocular complications one month after all cutaneous lesions had disappeared. The involved eye showed numerous minute transparent vesicles at the periphery of the cornea. Because the patient refused to be hospitalized, he was put upon Cortisone therapy, the drug being administered topically and systemically. Two days later irregular gray opacities were noted, together with haziness and edema of the cornea. At this time, scleral complications also became evident in the form of small red circumscribed areas which were very painful. By this time the patient was glad to accept hospitalization, and ACTH was immediately given in customary doses. My faith in this drug was once again vindicated, and dramatic improvements were evident within forty-eight hours.

The exact mechanism whereby ACTH suppresses inflammatory response in the body is still unknown. It is recognized that the drug does not neutralize toxins, and it does not alter the virulence of the invading organism, but it does suppress inflammatory response regardless of the cause. In ocular complications following herpes zoster this drug has a remarkable ability of inhibiting severe inflammatory

responses, which can destroy vision by producing unresolvable opacities. Undoubtedly new forms of therapy will be tried out for the treatment of herpes zoster ophthalmicus.

I am inclined to feel that regardless of the drug used, the cutaneous lesions of herpes zoster will run their course as it is a self-limited affair. When the ophthalmic division of the fifth nerve is involved it is not the cutaneous lesions which endanger the patient, but the ocular complications. Thus, in ophthalmology we are extremely fortunate in that we

now have at our disposal a drug which will control the ocular complications of the disease by suppressing the inflammatory action within the eye.

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MESENTERIC CYST: CASE REPORT

O. F. POMERLEAU, M. D., Sisters' Hospital, Waterville, Maine

A case of mesenteric cyst is reported first, because it is considered one of the rarest tumors encountered in the abdomen, second, because it is hardly ever diagnosed correctly preoperatively. Therefore, a brief review of the condition is of considerable value to physicians.

Medical historians record that Benivieni of Florence was the first to describe a mesenteric cyst, which he discovered during an autopsy. Up until 1850, this was the only description we had of this condition. In the next thirty years, an occasional cyst was removed by operation, but there was no recovery. From 1900 on, more operations were performed with a higher recovery rate and occasionally it was diagnosed previous to operation. About 500 cases of mesenteric cysts were reported in the literature up to 1935. It is estimated that it occurs in about 1 per 100,000 hospital admissions. At the Sisters' Hospital in Waterville, Maine, there were 75,260 admissions from 1930 to 1951 and no cases of mesenteric cysts were reported among them.

The etiology of mesenteric cysts is only theoretical. Many believe that they are congenital as they are frequently found in children and that they arise from misplaced lymphatic tissue cells, which proliferate and accumulate fluid, since there is no connection to the lymphatic system. Roller in his discussion of mesenteric cysts classified them etiologically as follows:

1. Embryocystoma or embryonic inclusions tumors
 - (a) Arising from remnants of wolffian body or the duct of Muellerian tube.
 - (b) Cystic dermoids and teratomas.
 - (c) Dermal inclusions.
 - (d) Enterocystomata-misplaced intestinal tissue.

2. Chylos cyst.
3. Bacterial or parasitic cysts
 - (a) Typhoid and tubercle bacilli.
 - (b) Echinococcus infection.
4. Traumatic cyst.
5. Angiomata of blood or lymph vessels.

Mesenteric cysts vary in size from a very small tumor to one which may fill the entire abdominal cavity. In the present case report, the cyst was the size of a grapefruit. They are more commonly found in the mesentery of the small bowel but have been found in all the other mesenteries. In the case under discussion, the cyst was in the mesentery of the ascending colon.

The symptoms of mesenteric cyst are not clear cut. It is to be borne in mind when the patient notices a slow enlargement of the abdomen or growth. At times it is the parents who may notice it in a child, as in the present case report. If the patient is a child, the appetite may be lessened so growth takes place slowly. This was evident in this case report because the patient was an identical twin boy and he did not grow as well in the past six months before operation as did his twin brother. The cyst is usually movable and that should give a hint that it could be of mesenteric origin. The cyst was movable in this present case, but the condition was not diagnosed as a mesenteric cyst preoperatively. Roller states that he had not diagnosed preoperatively his three cases, which he reported in an article on mesenteric cysts. Some of the symptoms may be: 1. Nausea. 2. Vomiting. 3. Colic. 4. Constipation. 5. Loss of weight and strength. 6. Intestinal obstruction. 7. Rupture with hemorrhage and peritonitis.

The treatment is surgical enucleation, as was done in this case. However, at times, it may be necessary to resect part of the bowel. The prognosis before

antibiotic drugs was not too good, as a 35% mortality was reported.

CASE REPORT

H. L. W., age $4\frac{1}{2}$, identical twin boy, was admitted to the Sisters' Hospital, October 12, 1949. He had been brought to my office the same day because the mother had noticed that his abdomen had been slowly enlarging all summer. She also had noted that he was not growing as well as his twin brother the past six months. He had no complaints and his mother claims that he felt good. When the boy was standing, it was noticed that the lower abdomen was enlarged, but not striking when seeing him for the first time. When prone on the examination table the tumor mass could be seen in the lower right abdomen. It was easily palpated, somewhat movable, about the size of a grapefruit. My impression at this time was a tumor of the kidney, probably a Wilm's tumor. The mother was told that the child had a tumor, which should be removed surgically, to which she agreed so the child was admitted. The past history of the child is essentially negative except for a herniotomy at the age of two. A flat plate of the abdomen was ordered and reported by Dr. M. F. Lubell, radiologist, as follows: Mass on right, probably enlarged kidney tumor, displacing intestinal coils. A chest X-ray showed the lung fields to be clear with no evidence of metastasis. The blood count was within normal limits, as was the urinalysis. Wassermann was negative. Blood test for typhoid, paratyphoid, and undulant fever were all negative. Blood group was O, RH positive. After three days of preoperative preparation, the child was scheduled for surgery. General anesthesia was used. Five hundred c.c. of whole blood was started at once. An 8-inch incision was made in the lower right quadrant over the tumor mass. The large mass was soon palpated. The ascending colon was on part of it, which was then mobilized and pushed laterally. It was difficult, as the colon was very adherent to the tumor mass. As soon as the colon was freed from the mass, it was found that the duodenum was also adherent at the upper pole and was mobilized. Dissection was carried posteriorly in order to find the pedicle, thinking it was a kidney tumor. However, no pedicle was seen and a large blood vessel was seen going to the tumor, which vessel was ligated and cut. This freed the entire mass which lay on the right kidney. The tumor was about 6 inches in diameter. There was no connection at all to the kidney except anatomically in position. The ascending colon was replaced in its original position

and all rents were repaired. The abdominal wall was closed in layers without drainage.

Recovery was uneventful. Temperature ranged from 101° for the first two days postoperatively and then reached normal where it remained until he was discharged, eleven days following operation. He was given penicillin, 300,000 units daily following surgery. He was out of bed on the fourth day.

The specimen was sent to the Central Maine General Hospital in Lewiston, Maine. Following is the report by Dr. I. Goodof, pathologist: "Microscopic examination — No evidence of malignancy. Cyst shows a dense fibrous wall, diffusely infiltrated with lymphocytes and plasma cells. At no point is there recognizable epithelial or endothelial lining. The wall shows occasional smooth muscle fibers suggesting that it is of a contractile nature. There are numerous blood vessels scattered throughout. In one section there are masses of cholesterol crystals, many of them engulfed by foreign body type giant cells. The general over-all appearance is consistent with the so-called mesenteric cyst which is usually the result of either an anomalous formation of lymphatics or an obstruction to the major lymphatic channels." Gross Examination — "Specimen consists of a cyst, which measures approximately 15 cm. in diameter. The wall of the cyst is composed of thin smooth fibrous tissue. In one area a yellow plaque, 1 cm. in diameter, is seen. In another area there is hemorrhage material. No other tissue is identified in the cyst wall. The contents of the cyst are composed of slightly green clear fluid. Diagnosis: Mesenteric cyst."

The patient has been followed since operation. There has been no recurrence of symptoms and he is now up with his twin brother in growth.

SUMMARY

A case of mesenteric cyst is reported so as to familiarize ourselves more with this rare condition. By being conscious of this condition, we will consider it more in our differential diagnosis of intra-abdominal disease.

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LIMITATIONS OF CONSERVATIVE THERAPY IN PERFORATED PEPTIC ULCERS

L. A. GUITE, M. D., Sisters' Hospital, Waterville, Maine

A survey of recent literature on the treatment of perforated peptic ulcer indicates a trend towards non-operative therapy of perforations. Some have warned however against such treatment until conclusive statistical evidence is obtained.

Conservative therapy is based on: 1. The use of continuous suction to keep the stomach empty. 2. Control of peritonitis by antibiotics. It is claimed that the results are as good as those obtained by surgical methods. The mortality varies from 0 to 10 or 15%. This would sound very good if it weren't for the fact that not enough cases have been reported so far to be significant.

Mage, in reviewing the literature from 1946 until July, 1951, could find only thirteen reports totalling 290 cases. Only two out of the thirteen had enough cases to be worthy of analysis, namely Taylor with 100, and Stead with 50 cases. Mage concludes that the results cannot be correlated to come to any valid opinions. There is no uniformity either in the use of suction or antibiotics. Even the diagnosis is questionable in certain cases.

Mikal and Morrison recently analyzed 500 consecutive cases of acutely perforated ulcers at Boston City Hospital from January, 1938, to May, 1950, in an attempt to present criteria for surgical or non-surgical treatment.

Four hundred and sixty-eight perforations were treated surgically with an operative mortality of 13.8%; and thirty-two were treated medically, the mortality being 84.3%. The much higher mortality rate with medical treatment is attributed to the fact that this form of treatment was reserved for moribund patients or those in shock.

From their analysis, Mikal and Morrison conclude that simple operative closure be performed for the following conditions: Perforation with early signs of spreading peritonitis; perforations with generalized peritonitis; formes-frustes ulcers which exacerbate; perforations over twenty-four hours old which continue to leak; conditions in which the diagnosis is uncertain and the patient fails to improve under conservative treatment; those with multiple ulcers or with previous history of perforations.

Conservative management is advocated for: formes-frustes ulcers; ulcers less than twelve hours old which show signs of improvement; perforations attended by shock; late perforations which have sealed off and formed an abscess; cases in which the diagnosis is equivocal.

With X-ray evidence of perforation not always

available preoperatively, (74.4% positive X-rays within 3 hours in Mikal and Morrison series) it may be difficult in atypical cases not only to diagnose perforations, but also their size and location. Duodenal perforations heal better than gastric perforations according to Beattie.

Additional information, which can be gained only by operation, is important for further treatment and prognosis. If one is dealing with a small punched-out perforation, it is quite different than if one were faced with a large perforation with thick non-tractile edges surrounded by dense scar tissue.

Welch has recently reported that "The status of gastric resection in perforation must be reassessed." He quoted Tovee who has shown that after perforation about $\frac{1}{3}$ of the patients will have enough symptoms to require resection at a later date. Another third will require medical therapy. It is agreed that primary resection in perforation should be reserved for first class risks or for those having hemorrhage or obstruction. With continued progress in surgery, the indications for primary resection may be widened. This would favor operative therapy for perforations.

Taylor, who is an advocate of conservative therapy, states that the method was deemed favorable for cases which had apparently sealed off. He admits that it is not certain which of the cases are suitable for conservatism. Of twenty-four cases reported by him in one series treated medically, two died.

Very significant is a group of twenty-two cases of unsuspected perforation not reported because the diagnosis had not been made or because the patients were moribund on admission. All of the twenty-two died and the diagnosis was confirmed at autopsy.

The success of medical treatment depends on keeping the stomach empty by suction. It is made difficult by the fact that under the very best of nursing and medical care one may encounter various technical difficulties. Constant supervision by trained personnel is not always available. Failure to maintain adequate suction means leakage which, in turn, predisposes to peritonitis. The peritonitis may be masked by the use of antibiotics and considerable leakage may occur before one becomes aware of it.

Even if with suture of a perforation plus an omental plug one can get occasional leakage, it is difficult to understand how a perforation sealed off only with recent, fresh adhesions can better withstand the strain of vomiting or retching. Suturing is a relatively simple procedure and can be carried out safely in the majority of cases.

More important is the matter of accurate differential diagnosis. The diagnosis of perforation in atypical cases is quite difficult. Acute cholecystitis and acute fulminating appendicitis, to mention just two of the most frequent surgical conditions, may at times simulate perforation. Failure to operate could easily prove disastrous if one were to make the wrong diagnosis.

SUMMARY

It would appear from the previous discussion that in the great majority of cases operation by simple closure for perforation should be the treatment of choice. Until enough statistical evidence is available, conservative therapy should be regarded as being on trial and reserved for poor operative risks, admitted late after perforation. Operation is a relatively simple procedure with a low mortality and affords the only accurate way to make a differential diagnosis. Conservative therapy puts the pressure on the man who

uses it; and if operation is finally decided on, it may be too late.

There is sufficient evidence as pointed out by Welch, Morrison, and others to question whether simple closure is adequate in all cases. Finally gastric resection in six to eight weeks after perforation as advocated by Wangensteen is imperative in the prevention of further complications.

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SYSTEMIC ANTI-INFECTIVE AGENTS

C. HIRSCHBERGER, M. D., Sisters' Hospital, Waterville, Maine

The art of healing goes back to the early stages of human history. It was primitive then, confined to the care of wounds acquired in fights and battles. Greek and Roman physicians knew that the juice of the white poppy stopped pain and brought sleep. They knew and used the powerful poisons they could obtain from the deadly nightshade (*atropa belladonna*) and from the seeds of *Nux Vomica*.

Anti-infective therapy, even common cleanliness, was unknown then and it remained unknown throughout the middle ages up to the days of Semmelweis, Lister, Koch, and Pasteur in the second half of the 19th century. The first anti-infective measures were of a mere local nature, scrubbing with soap and brush, spraying and painting with solutions of questionable germ-killing effect which often did extensive damage to the patient. With the coming of antisepsis the fight against infection entered a new stage. Koch demonstrated the tubercle bacillus in 1882, other pathogenic bacteria were found during the following years but the 20th century had already begun before the first usable biological anti-infective therapeutic, Di-AT, was available.

1908 may be considered a milestone in the history of anti-infective therapy; Ehrlich's compound 606, salvarsan, a soluble, injectable chemical was capable of killing the living syphilis-causing spirochetes in the body of the host without damage to the body itself. Ehrlich dreamt of a drug which could do the "great

sterilization," which could do the killing of all pathogenic organisms within the body. Numbers of new and better chemical therapeutics appeared on the market, but it was not until 1932 that the "Golden Age" of anti-infective therapy, which Ehrlich had envisioned, started. Domagk, a German scientist, proved the value of the first sulfanilamide, Prontosil, a powerful agent against infections caused by streptococci, gonococci and pneumococci. The idea of using such a germ-killer was so revolutionary that it took six more years before it was taken into the therapeutic armamentarium of the general practitioner. Soon sulfanilamide had to give room to newer, less toxic sulfonamids, sulfapyridine, sulfathiazole, sulfadiazine and sulfamerazine, just to mention a few of the group of soluble sulfonamides. These were and still are used against streptococcus infections, such as scarlet fever and erysipelas, against gonorrhea and pneumococcus-pneumonia, meningitis, urinary infections and others. In Promin we obtained the first compound to cure leprosy, whereas the same sulfonamide did not cure tuberculosis as was expected after laboratory experiments. The insoluble sulfonamides, such as sulfathalamide and suxidine are not reabsorbed from the digestive tract, but on their way eliminate the pathogenic intestinal flora.

Within a period of five years the sulfonamides were widely superseded by the discovery and rapidly spreading use of penicillin, which is not a chemical

compound, but an antibiotic obtained from a mould. It is non-toxic to the host and effective against a large variety of organisms including streptococci, pneumo-meningo-gonococcus and last, not least, the causative trepanoma of syphilis. The treatment of syphilis can be finished within ten days with 6,000,000 units of penicillin given during that period. In 1944, Streptomycin put in its appearance to cure intestinal and urinary infections caused by gram-negative organisms besides Friedlander pneumonia, tularemia, plague and tuberculosis.

The administration of streptomycin gave us the first weapon against the till then fatal tubercular meningitis. The effect of streptomycin upon the bacillus is aided greatly by the simultaneous use of para-amino-salicylic acid (PAS), which by itself is a powerful chemical agent and is effective against rickettsial diseases. Dihydrostreptomycin is less toxic than the original antibiotic and just as effective. Penicillin and Streptomycin can be used together and as there is a synergism of the two antibiotics the effect of the combination is greater than one would expect.

The antibiotics mentioned so far are most powerful when given parenterally. Aureomycin, Chloromycetin and Terramycin are new antibiotics, which preferably are given orally. They are used in the treatment of virus pneumonia, brucellosis, urinary infections, typhoid fever, typhus, whooping cough and also rickettsial diseases. These three last-mentioned antibiotics and penicillin are ideal anti-infective agents, as they kill and hinder the reproduction

of the pathogenic organisms without injury to the host.

There are a few antibiotics which, while being powerfully anti-infective, are too toxic when taken internally or parenterally, Bacitracin and Tyrothricin are used externally, topically only, for this reason. Other antibiotics are under investigation and experimentation at this time.

As malaria is encountered rarely in our part of the country, I shall just mention the newer anti-malarial drugs Plasmochin, Atabrine, Paludrine, Primaquine and Pentaquine. Whole new parts of the world, such as Equatorial Africa and South America, will be opened to colonization as soon as malaria is conquered by the use of those compounds.

There are two ways to combat infection successfully. The use of anti-infective drugs and antibiotics is one method. The other one is by active, or in emergencies — passive immunizations against micro-organisms and their toxins. The outcome of the battle between the pathogenic organisms and the host is determined not only by the number and virulence of the invading germs but also by the resistance of the patient.

Preventive medicine is trying not only to eradicate pathogenic organisms by sanitary measures, but endeavours still more to increase the resistance of the individual against disease by improving the standard of living of the population. Nurses and doctors have a common interest in not only fighting disease but also preventing sickness.

THE ROLE OF ANTISEPSIS IN SURGICAL FIRST AID

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If you should be traveling anywhere in the civilized world or in parts not too civilized and should have the misfortune to suffer an attack of appendicitis, your treatment, regardless of the language spoken, would be essentially the same. The aseptic principle is understood in every country. If, on the other hand, you should be knocked down in the street and suffer a compound fracture or be injured at your work in industry, the story would be quite different. Operating room technique is standardized. Surgical first aid is not. Surgery, as we understand the term, is about 80 years old. Lister and Pasteur gave this priceless gift to mankind when they proved that infection was due to living organisms that could be destroyed by heat or chemicals.

Antisepsis preceded asepsis by a short time and then was dropped. Lister thought that the operative

wound must be protected from bacteria in the air and he used a chemical mist or fog to do this. It was soon found that if everything that touched the wound could be rendered sterile by heat the bacteria in the air could be disregarded. We hear very little about antiseptics today and yet antisepsis certainly has a place, not in the operating room perhaps, but in the great and apparently growing field outside the hospital, in the street, in wars, and in industry.

The greatest mass demonstration of the need of something more than asepsis was in the First World War in the first battle of the Marne in August, 1914, and well within the aseptic era. The percentage of infected wounds following injury was just what it was following any of the battles of the American Civil War. In both cases, all the wounded became infected. All the compound fractures that lived ended up with

chronic osteomyelitis, a condition that up to about the year 1916 no one knew how to treat successfully. Practically all of this misery and loss of human usefulness might have been avoided by the intelligent use of antiseptic first aid.

For every deliberately inflicted surgical wound done on the operating table under rigid aseptic precautions, there are dozens of accidentally inflicted wounds suffered where there are no precautions whatever. The first aid treatment is usually provided by someone with no surgical pretensions, usually not by a surgeon, often by one of the injured man's companions. The first aid treatment to be valuable must be simple; if it can be applied by a non-medical man so much the better. Aseptic first aid admittedly is simple and is also ineffective. Aseptic first aid is the application of a sterile gauze pad to the injured part, the object being protection until such time as the injured person can be moved to a hospital where reparative surgery, if necessary, can be done under conventional aseptic conditions. Often, before the patient reaches the hospital, the wound has undergone changes that makes infection inevitable. Antiseptics, intelligently used, will prevent this.

Antisepsis differs from asepsis in that it is active where asepsis is passive. Antisepsis does more than protect the wound from bacteria; by keeping the wound wet, it preserves the vitality of the tissue so

that it can combat bacterial invasion. Dry tissue is dead tissue. Air, even air containing no bacteria, is a traumatizing agent of the first importance. An antiseptic for use in surgical first aid must fulfill certain requirements. It should be inexpensive so that it can be used freely, effective in preventing infection, non-toxic, and easily prepared anywhere. No antiseptic meets these requirements better than the solution developed during the First World War and known as Dakin's solution. Normal saline is effective in preventing drying of the wound but has no anti-bacterial value or properties. Antibiotics are largely used today; used alone they have little value in preventing infection, used in connection with a wet antiseptic dressing they can, at least, do no harm.

I would like to believe that something I might say will lead to a wider use of antiseptic first aid. Alas, I suffer from no such delusions. Any improvements in method in our profession come slowly, if they come at all. Lister's findings were bitterly opposed by the profession when first advocated. Simmelweis, who showed that as simple an act as thoroughly washing the operator's hands, would control puerperal sepsis, was dust in the grave before the profession was willing to admit that his findings had any merit. And being well along in years myself, I fear that I will see no large increase in the use of what I believe to be a major improvement in surgical first aid methods.

U. S. Medical Schools Receive Volunteer Grants

The sum of \$671,834 was turned over by the American Medical Education Foundation to the National Fund for Medical Education for distribution to the 79 medical schools in the United States. This represents the amount collected from physicians during the

first six months of 1952. This money added to the amount collected from industry by the National Fund for Medical Education was distributed July 31 in the form of grants amounting to \$15,000 to each of the 72 four-year schools and \$7,500 to each of the seven two-year schools.

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ANNOUNCEMENT

FALL CLINICAL SESSION

Waterville, Maine

Sunday and Monday

October 26 and 27, 1952

Headquarters and Registration

Elmwood Hotel

Sunday, October 26

Dinner meeting at the Elmwood Hotel, Sunday evening, will be followed by a panel on poliomyelitis. This will be conducted by a panel of research workers considering the present status of poliomyelitis

Monday, October 27

CLINICS

Clinics will be held at the Central Maine Sanatorium, Sisters' Hospital and Thayer Hospital on Monday, October 27th

DINNER MEETING

A dinner meeting, with speakers to be announced, will be held at the Elmwood Hotel

PROGRAM

A copy of the complete program will be mailed to each member of the Association early in October and it will be published in the October issue of the JOURNAL

RESERVATIONS

Don't miss this session — Make your reservations TODAY

REPORT OF DELEGATE TO THE 1952 ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION*

I came back from the American Medical Association meeting a week ago Saturday and I have a few things to say about it. You have probably read about some of them but a few things concerning the meeting ought to be mentioned. Therefore, I will proceed in the order in which I have made notes.

First, the A. M. A. has definitely gone on record as hoping that the medical men in the various communities would take a more active interest in Health Councils. Throughout the United States there are being set up various groups as Health Councils that have to do with sicknesses of various types. As has happened in the past, the medical people have shunned these with the result that they have lay supervision. Therefore, in order that the Councils may be properly directed, the A. M. A. has suggested the foundation of Health Councils which have a diversified but active medical membership.

Another thing discussed very much and about which Dr. Jameson will speak later, was the active support that the A. M. A. would like to have the medical men give to the medical schools. It asks each man to make as much of a donation as he possibly can. Last year, each of the medical schools in the United States received approximately \$20,000 from the fund. To some of the schools this meant the difference between getting by and going "in the red."

One of the great problems discussed at the meeting was the certification of non-medical personnel now doing clinical pathology, clinical psychiatry, etc. It has been understood that they are looking for certification. I have had some correspondence with Dr. Richard C. Wadsworth, who represented the state society pathology group, and I took a resolution to the A. M. A. definitely opposing the certification of any non-medical personnel. This problem was considered, and it has been decided definitely that there will be no certification of non-medical personnel in any of the fields involved.

There is still the problem of what to do with these people and how to handle them. It was referred back to the committee for further discussion as to how these people could properly be taken care of.

Another question of interest to you men is the re-distribution of internships. As you are aware, in many of the large places there is a mortgage on the interns, so much so that the hospitals and particularly our groups have difficulty in obtaining them. It has been decided that the A. M. A. would set up a group which would re-allocate the residencies and the internships for more equal distribution, so that the smaller institutions and hospitals that are located at a great distance away from the medical centers might be served better. I am sure that you will all agree this is extremely important.

Another problem was a school for medical librarians. A great many schools train them but none of them are standard, and they all have different techniques. There is now being established a school for the purpose of training medical librarians properly and in a standardized way in order that they may be hired and come into a hospital suitably instructed.

Another matter concerned the Magnuson Committee which is making the survey on the health needs of the United States. It was proved definitely at the meeting that this committee was set up to take the Democratic Party off the hook, in so far as socialized medicine was concerned, for this campaign. No committee could possibly review in six or seven months the health needs of the United States. Therefore, this committee is concerned mostly with reviewing and, by his own admission, Dr. Magnuson stated that he could not do the job in the time given. (Incidentally, the committee is limited to January first and they will have to report at that time. Several men were offered the job before Dr. Magnuson was appointed chairman; Dr. Lahey of Boston refused it because he felt it was a political affair.)

Well, the big jam at the A. M. A. meeting came out in this way. A resolution was put before the Delegates condemning the committee report and Dr. Magnuson particularly, because he had made some very critical remarks about the A. M. A. Dr. Magnuson did not enhance his standing by such remarks as he has a great responsibility, which can only be carried out by tact and co-operation. I felt that no group of Delegates could condemn the report of the committee until the report was submitted even though we had a reasonable doubt as to its accuracy. The result was a great amount of newspaper reporting over the feud; in fact the subject made the front page of the *Tribune*.

It was brought out by Dr. Westmoreland of Chicago, in panel discussions, that the report returned for his signature was entirely different and separate from anything he had said, and also stated that since it was a misrepresentation he would have nothing to do with it. In other words, he declared that the report which was submitted, purporting to be from his panel, could have been written before the panel met.

Another matter explained at the meeting was the A. M. A. stand against H. R. 7800, the bill to increase the subsistence payments to the old folks. The A. M. A. was condemned for its stand and the talk was that it was unholy, against the Lord, etc. Actually the Association is against only one section of the bill which is Section 3. The A. M. A. was desirous of having the old age pension increased; however, in Section 3, the Federal Administrator is given complete control relative to selecting the doctor for the old people, setting the fee, etc. He is unlimited entirely in what he chooses to do. It was the feeling of the A. M. A. that the Federal Security Administrator has more than sufficient power already and that if this section of the bill is to be retained, specific regulations should be made as to the fee charged and as to the control of it. As the result of the discussion, it was suggested that this bill be sent back to the committee to be revised. The newspapers did not print why the A. M. A. was against the bill. Actually the bill was brought to the floor without hearing, with limited debate, and without the ability of amendments. It was one of the things they jammed through and attached a bad section onto a good bill. The Federal Security Administrator now has approximately two billion dollars (\$1,700,000,000) at his disposal, as you probably know.

I would also like to tell you how the House of Delegates

* Presented at the Annual Session of the Maine Medical Association, House of Delegates, June 22, 1952.

s arranged. It is made up of 188 doctors who are elected, as I have been elected to represent you folks. The number of delegates is dependent upon the membership of the respective state societies; some have one, larger societies have as many as twenty-one representatives.

In addition to the elected representatives from the States, there are also groups appointed from each scientific section, one from the Orthopedic Section, one from the Pathological Section, etc. Each section elects its own representative. Incidentally, Dr. Westmoreland is the representative of the Pathological group.

There is also a representative chosen by the various branches of the Armed Forces; the V. A., the Army, Navy and Air Force, all representatives chosen by their own particular group.

The age of the members of the House of Delegates runs from 40 to 80 years, the average age being 59. As to the length of the service of the Delegates, 19 served one year, 28 served two years, 22 served for three years, 25 served four years, 10 men served five years, 45 men served from six to ten years, 12 men served from eleven to fifteen years and 10 men served from sixteen to twenty years. Therefore we note

that over 60 percent of the men have been in the House for less than six years and this suggests a healthy turnover.

Thirty percent of the men in the House of Delegates are doing a general type of practice; 14 percent do surgery; 6 percent urology; 20 percent obstetrics; and the remaining 30 percent represent the remaining branches of medicine. About 30 percent hold professorships or teaching positions in various medical schools. It has been said that the A. M. A. did not have on its Board anyone representing teachers. This is not so as I have just indicated to you.

This is a very short sketch of the A. M. A. Convention. I could go on and talk at considerable length but in this short time I have given you a brief account of the many problems facing the House of Delegates.

It is an extremely difficult job to cover all the things going on at these A. M. A. meetings, bills before Congress being considered, plus scientific and other matters. It is no longer a position involving simply medical matters, but also political medical matters must be taken into consideration and evaluated critically in accordance with the principles of our Founding Fathers, and a sane Economic Philosophy.

MARTYN A. VICKERS, M. D.

REPORT OF DELEGATE TO THE ANNUAL MEETING OF THE NEW HAMPSHIRE MEDICAL SOCIETY*

The New Hampshire Medical Society held its annual meeting at the Equinox House, Manchester, Vermont, on October 1, 2, and 3, 1951. This was a joint meeting with Vermont and there were 600 doctors present from both societies. They had an excellently balanced scientific program.

I attended several sessions of the House of Delegates and noted that they discussed at length many problems which were common to our Society.

Two worthwhile resolutions were adopted by the House of Delegates that are perhaps worthy of consideration by our own Society.

The first one was this. They decided to have a "Potential Delegate" go along as an Alternate for two or three years with their Delegate to the AMA convention, the objective being to initiate him into the procedures of the AMA House of Delegates sessions, and to introduce him to the influential members. In other words, this would enable him to "learn the ropes" before taking over the job as full time delegate.

* Presented at the Annual Session of the Maine Medical Association, House of Delegates, June, 1952.

The second resolution was a "Code of Coöperation," as they called it, which is a Code referring to a "Standing Operating Procedure" of coöperation with the newspapers, radio, and magazines in releasing medical information regarding patients or doctors. They have a State Committee which passes on any questionable problems relative to newspaper and radio releases; that is, if it is questionable as far as the doctor is concerned or as far as the patient is concerned. The Code has been in operation for a short period of time, and everyone felt that it was working out well.

There is one other thing that I might say in closing. It appeared to me that there was a lot of spade work done by these various New England medical societies on problems that are common to all of us, and I suggested to the Executive Secretary of the two State Societies that the Transactions of their House of Delegates meeting be sent to our Executive Secretary for analysis and the opportunity of taking out the material that might be pertinent and helpful with the problems we have in common.

PHILIP P. THOMPSON, JR., M. D.

REPORT OF DELEGATE TO THE ANNUAL MEETING OF THE VERMONT STATE MEDICAL SOCIETY*

I attended the Vermont meeting, which was held in conjunction with the New Hampshire meeting, that Dr. Philip Thompson just told you about, at the Equinox House, Manchester, Vermont, October 1, 2 and 3, 1951. I found that many of my old classmates were active as Officers and Delegates of the Vermont Society.

* Presented at the Annual Session of the Maine Medical Association, House of Delegates, June, 1952.

The arrangement of their meetings is different from ours. They have two full days of meetings and the Golf Dinner is on Sunday evening and the Annual Banquet on Monday evening. The convention closes at noon on Tuesday.

I did not contribute too much scientifically, but I did uphold the reputation of the State, socially.

I appreciate the honor of representing the State Society at this meeting.

FRANCIS A. WINCHENBACH, M. D.

REPORT OF DELEGATE TO THE ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY*

I attended the 171st Annual Meeting of the Massachusetts Medical Society, held at the Hotel Statler in Boston on May 20, 21 and 22 of this year. It was a very interesting meeting and there were a number of features of the meeting in which I was particularly interested.

One was a talk by Dr. Joseph Garland, Editor of the *New England Journal of Medicine*, on the history of that publication.

I was also very much impressed that at the Annual Meeting, more than fifty members of the Society were presented their 50-year awards. It seemed to me, coming from the

State of Maine where people are noted for old age, that that was a remarkable turnout for Massachusetts.

There was a Cardiac Symposium on the second day of the meeting in which I was particularly interested; it covered the various phases of the medical and surgical aspects of heart disease.

Dr. John W. Cline, President of AMA, spoke at the Annual Dinner that night.

All told, the session was an extremely excellent one; the scientific papers were of the first-class order, all through the meeting. The meeting was very well attended, too.

EMERSON H. DRAKE, M. D.

* Presented at the Annual Session of the Maine Medical Association, House of Delegates, June, 1952.

REPORT OF DELEGATE TO THE CONNECTICUT STATE MEDICAL SOCIETY*

Upon April 29th, 30th, and May 1st, I attended the One hundred and sixtieth annual meeting of the Connecticut State Medical Society as a delegate from the Maine Medical Association. The meeting this year was held at Bulkeley High School in Hartford, Connecticut. The annual meeting of the House of Delegates of the Connecticut Medical Society was held upon Tuesday, the first day of the meeting, starting at ten in the morning and going through until four-thirty in the afternoon. As is the custom in Connecticut, the first day of the meeting is devoted to the business part, which is an all day session and usually a very full one.

During the past year in Connecticut the State Medical Society and the Connecticut Cancer Society, through the County Medical Associations, sponsored a new cancer detection program in an attempt to promote early admission and treatment of cancer. The plan as provided, to be carried out in physicians' offices, includes a nine point examination of the accessible portions of the human body for evidence of cancer. By so employing the many physicians in the state, it provides hundreds of detection centers for cancer throughout the community. This appeared to be a very excellent plan for the early detection of cancer.

I was particularly interested in the report of the Connecticut Medical Service which is also connected with the Connecticut Hospital Service, Incorporated. In the report of the committee, a new contract was devised for the Hospital Service which increased the per diem allowance from six to nine dollars and additional premiums charged to meet the cost and increased charges that were being made for special services. During the first few months of the new program, there were many cancellations because of the increased rates and the Service operated at a deficit. However, the losing trend was halted and additional subscribers were enrolled to take the place of those cancelled out so that at the end of 1951, the reserve in the fund had been built up to a satisfactory

level. At the present time, about 96% of the physicians in the State of Connecticut are enrolled in the plan. In talking with one of the directors, who is also a physician, I learned that they processed about a thousand claims per week. 90% of these claims are processed and the check is in the physician's office in 72 hours. To date, three million dollars has been paid out in surgical and medical fees. In Connecticut, the council of The Society appoints three directors to the Associated Hospital and Medical Service and two other physicians are appointed by the lay board itself. At the present time, the Administration of the Connecticut Medical Service is under the direction of William H. Horton, M. D., a member of the society.

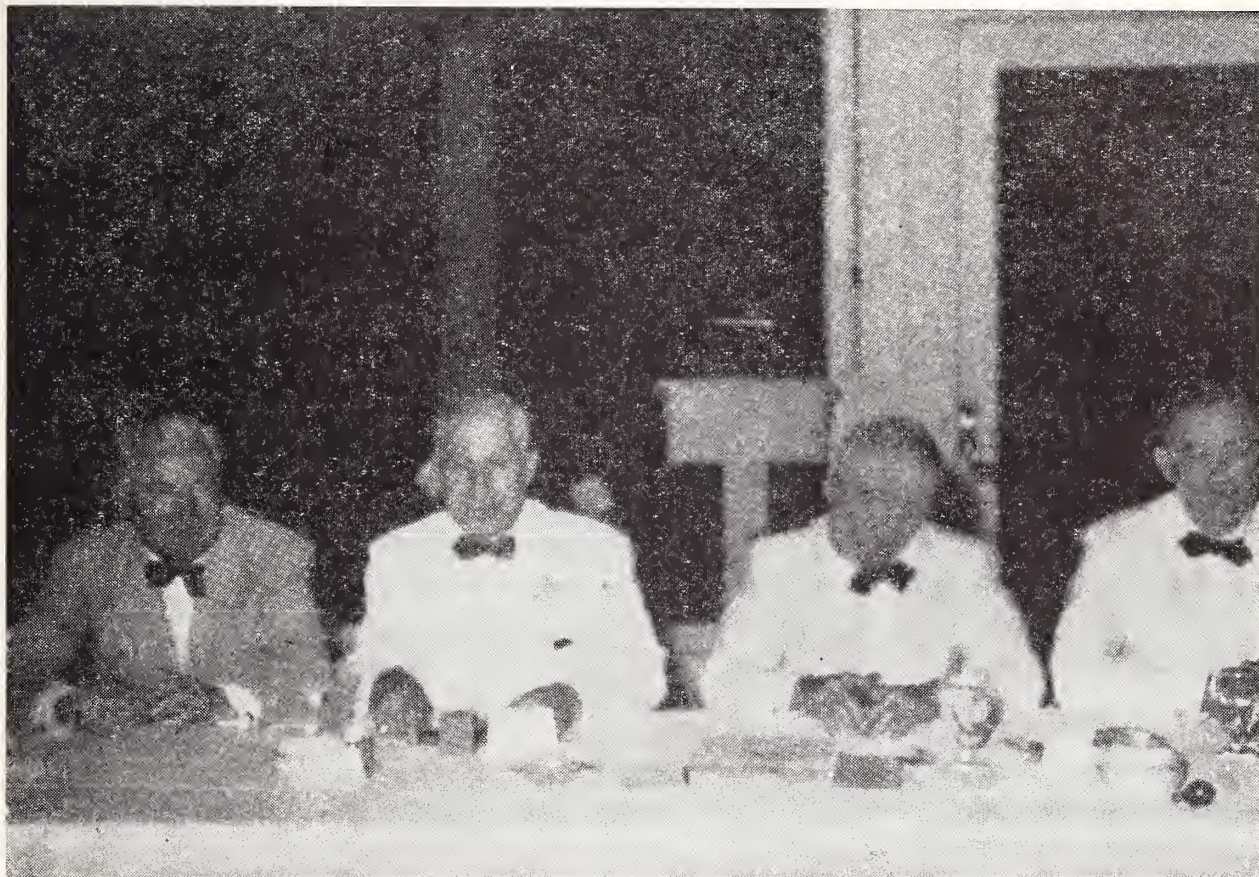
In addition this year, the Connecticut Medical Service, subject to acceptance by the House of Delegates of the Connecticut Medical Society, authorized payment of additional benefits for the professional services of Doctors of Medicine rendered in a hospital for the treatment of Medical diseases, without any increase of premiums. Payment at the rate of \$3.00 for each day the physician visits the patient while he is hospitalized for the treatment of any medical condition, beginning on the fourth day of each hospital admission and continuing thereafter, not to exceed a total of 21 payable days during 1952. The doctor's charges during the first three days of hospitalization will be at whatever rate he feels is reasonable for the professional services he renders. Since in the majority of illnesses requiring hospitalization, the greater part of the diagnostic work-up or intensive treatment takes place in the first days of hospitalization, it is to be expected that the doctor's charges during the first three days will usually be greater than the rates paid thereafter by Connecticut Medical Service. The rate paid by C. M. S. is not intended to indicate in any manner, the charge which the physician may make for his services during the three days before C. M. S. coverage begins. The patient member is personally and financially responsible to the doctor for all of his charges for the first three days without reference to any payment which may be made by C. M. S.

* Presented at the Annual Session of the Maine Medical Association, House of Delegates, June, 1952.

for its services thereafter. If the patient is entitled to Service benefits, the payment by C. M. S. for the first visit on the fourth day and thereafter will be accepted by the participating physician as his total charge for each day he visits during the period of C. M. S. coverage. A Service benefits patient, however, will still be responsible for the participating physician's charges during the first three days.

Apparently after listening to the report of the committee, the Connecticut Medical Service appears to be quite successful. In addition to these interesting discussions, there was a round of social events which both my wife and I enjoyed immensely. Indeed, the meeting ended all too soon as far as we were concerned.

THOMAS A. MARTIN, M. D.



Dr. Martyn A. Vickers

Dr. Louis H. Bauer

Dr. C. Harold Jameson

Dr. Eugene H. Drake

A. M. A. President, Dr. Louis H. Bauer, Guest Speaker at 1952 Annual Session of M. M. A.

Dr. Bauer, President of American Medical Association, second from left in above picture, addressed members and guests attending the dinner meeting of the Maine Medical Association on Monday evening, June 23rd, at The Samoset, Rockland, during the 1952 annual session.

THESE YOU CAN'T AFFORD TO MISS

October 26 and 27, 1952

Fall Clinical Session — Waterville, Maine — Headquarters, Elmwood Hotel
(A program of value to every member of the Association)

June 21, 22, 23, 1953

Centennial Session — Portland, Maine — Headquarters, Eastland Hotel
(A Golden Opportunity)

MARK THE DATES ON YOUR CALENDAR TODAY

COUNTY SOCIETIES

Androscoggin

President, Alcid F. DuMais, M. D., Lewiston
Secretary, Paul G. Lemaitre, M. D., Auburn

Aroostook

President, Clement L. Donahue, M. D., Caribou
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Thomas A. Martin, M. D., Portland
Secretary, Ralf S. Martin, M. D., Portland

Franklin

President, Wallace H. Duffy, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Silas A. Coffin, M. D., Bar Harbor
Secretary, Arthur M. Joost, Jr., M. D., Bucksport

Kennebec

President, Francis H. Sleeper, M. D., Augusta
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, Gilmore W. Soule, M. D., Rockland
Secretary, Robert L. Allen, M. D., Rockport

Lincoln-Sagadahoc

President, John F. Dougherty, M. D., Bath
Secretary, M. W. Westermeyer, M. D., Bath

Oxford

President, Edward L. Reeves, M. D., Lewiston
Secretary, Dexter E. Elmore, M. D., Dixfield

Penobscot

President, Wesley C. McNamara, M. D., Lincoln
Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Linus J. Stitham, M. D., Dover-Foxcroft
Secretary, George C. Howard, M. D., Guilford

Somerset

President, H. Carl Amrein, M. D., Madison
Secretary, Niles L. Perkins, Jr., M. D., Bingham

Waldo

President, Ernest W. Stein, M. D., Pittsfield
Secretary, Raymond L. Torrey, M. D., Searsport

Washington

President, DaCosta F. Bennett, M. D., Lubec
Secretary, Karl V. Larson, M. D., East Machias

York

President, Kenneth J. Cuneo, M. D., Kennebunk
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Cumberland

Edward A. Greco, M. D., of Portland, was a delegate from the National Tuberculosis Association to the 12th International Congress Against Tuberculosis held in Rio de Janeiro, Brazil, from August 24th to 30th.

While in Rio, Dr. Greco also attended the American College of Chest Physicians second annual International Congress on diseases of the chest. He is a National Officer of the American College.

Somerset

The annual meeting of the Somerset County Medical Society was held at Lakewood, Maine, August 26, 1952. The minutes of the previous meeting were read and approved. Dr. Niles L. Perkins, Jr., of Bingham, was elected to membership.

The following Officers were elected for the coming year:

President, H. Carl Amrein, M. D., Madison.

Secretary-Treasurer, Niles L. Perkins, Jr., M. D., Bingham.

Board of Censors: Walter S. Stinchfield, M. D., Henry E. Marston, M. D., Lester F. Norris, M. D.

Program Committee: Richard P. Laney, M. D., Harland G. Turner, M. D., Niles L. Perkins, Jr., M. D.

Delegate to the Maine Medical Association: George E. Sullivan, M. D., Bingham. Alternate, Howard L. Reed, M. D., Skowhegan.

A lobster dinner was enjoyed by members and their wives at the Lakewood Inn.

H. CARL AMREIN, M. D.

New Member

Somerset

Niles L. Perkins, Jr., M. D., Bingham, Maine.

NEWS AND NOTES

Hospitals Willing to Accept Poliomyelitis Cases

The following hospitals have indicated willingness to accept Poliomyelitis cases:

Augusta General Hospital, Augusta—emergency base.

Central Maine General Hospital, Lewiston.

Community General Hospital, Fort Fairfield—for diagnosis and mild cases.

Eastern Maine General Hospital—Bangor.

Franklin County Memorial Hospital, Farmington—diagnosis.

Knox County General Hospital, Rockland—diagnosis only.

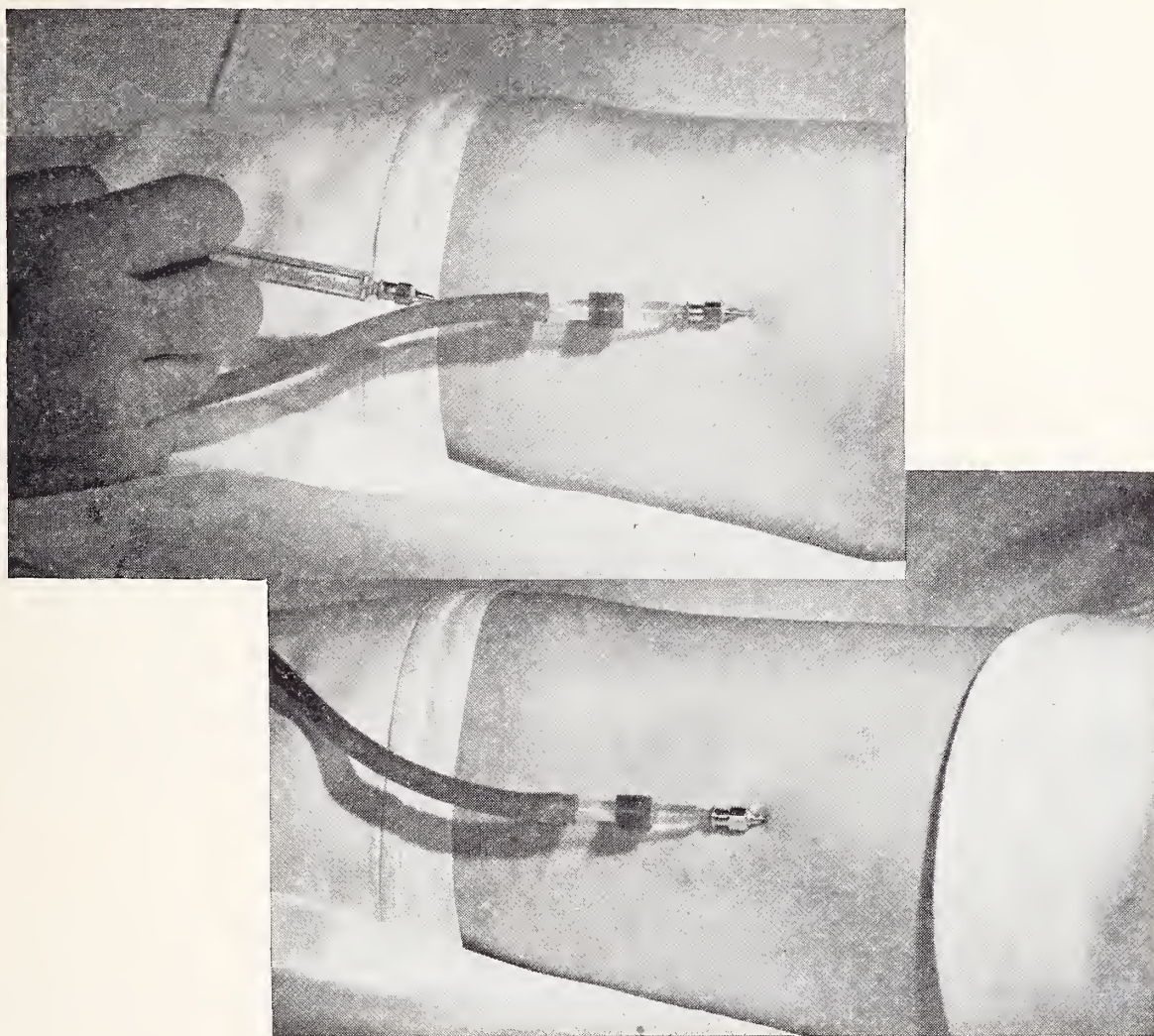
Madigan Memorial Hospital, Houlton.

Maine General Hospital, Portland.

Mercy Hospital, Portland—4 cases.

Miles Memorial Hospital, Damariscotta—first 24 hours only.

Milliken Memorial Hospital, Island Falls.



Vein-Sparing Parenteral Alimentation Facilitated with **ALIDASE**

For either rapid or slow administration of fluids, the use of ALIDASE®—highly purified hyaluronidase—places hypodermoclysis on a practical basis. When Alidase is added to the first few cubic centimeters of fluid, absorption from subcutaneous tissue is greatly facilitated. Injection is thus permitted at a convenient site with little or no swelling or discomfort, without arm boards and without many of the difficulties encountered with intravenous injection.



SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

Mount Desert Island Hospital, Bar Harbor—diagnosis only.

Rumford Community Hospital, Rumford—diagnosis only.

Sisters' Hospital, Waterville.

St. Mary's General Hospital, Lewiston—diagnosis only.

Thayer Hospital, Waterville.

Webber Hospital, Biddeford.

List of Respirators and Hot Pack Machines Available in the State of Maine.

Hospital	Respirators	Machines
Maine General Hospital, Portland	2	4
Sisters' Hospital, Waterville	1	
St. Andrew's Hospital, Boothbay Harbor	1	1
Veterans' Hospital, Togus	1	4
Central Maine General Hospital, Lewiston	2	1
Augusta General Hospital, Augusta	1	
Eastern Maine General Hospital, Bangor	2	1
Madigan Memorial Hospital, Houlton	1	
Webber Hospital, Biddeford	1	1
Mercy Hospital, Portland		3
Henrietta D. Goodall Hospital, Sanford	1 Resuscitator	

ELLA LANGER, M. D., *Director, Services for Crippled Children, State of Maine Department of Health and Welfare, Augusta.*

Army In Korea Seeking Civilian Medical Officer (Public Health)

Tour of Duty: 12 months

Basic Salary: \$8360. per annum (GS-13)

Added Post Differential: 25% of basic salary

Meal Costs to Employee: \$1.20 per day

Major Duties:

Implements and adapts the national medical care and public health program to meet the needs of an assigned geographic area having a population of from two to four million people, including approximately twenty percent refugees and war sufferers, living in a war-torn, primitive country.

Gives technical advice and guidance to Korean provincial public health official in planning and operating a provincial medical care and public health program, to include the allocation, distribution, and use of disease prevention, relief medical care, and public health supplies and equipment.

Determines long-range training and permanent type medical facilities and equipment needed and so plans day-to-day operations to phase in with this overall plan.

Furnish resume or apply personally to:

Department of the Army
Office of the Secretary of the Army
Office of Civilian Personnel
Overseas Affairs Division
346 Broadway, Room 505
New York 13, N. Y.

Urology Award

The American Urological Association offers an annual award of \$1000.00 (first prize of \$500.00, second prize \$300.00 and third prize \$200.00) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been in such specific practice for not more than five years and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Jefferson, St. Louis, Missouri, May 11-14, 1953.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before January 15, 1953.

Distribution of Chloromycetin To Be Continued

The Food and Drug Administration of the Federal Security Agency on August 14, 1952, announced its decision to permit the continued distribution of the antibiotic drug Chloromycetin under revised labeling that will caution physicians explicitly against its indiscriminate use.

Charles W. Crawford, Commissioner of Food and Drugs, said "The Administration has weighed the value of the drug against its capabilities for causing harm and has decided that it should continue to be available for careful use by the medical profession in those serious and sometimes fatal diseases in which its use is necessary."

(From Federal Security Agency release—E53, which is on file in the Maine Medical Association office.)

"Psychological Problems of Cerebral Palsy"

First of its kind is a booklet, "Psychological Problems of Cerebral Palsy," just published by the National Society for Crippled Children and Adults, the Easter Seal Society.

Copies of the booklet can be purchased at \$1.25 each from the National Society for Crippled Children and Adults, 11 South LaSalle Street, Chicago 3, Illinois.

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.

Bath Memorial Hospital, Bath, Maine, 2nd Tuesday, 3.00-5.00 P. M., Francis A. Winchenbach, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Waldo A. Clapp, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.



The Journal of the Maine Medical Association

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Portland, Maine, October, 1952

No. 10

MASSIVE GASTRO-DUODENAL BLEEDING OF NON-MALIGNANT, NON-CIRRHOTIC ORIGIN*

A Review of Clinical Experience

JAMES M. PARKER, M. D., Portland, Maine

Much has been written during the last few years on the subject of massive bleeding from the stomach and duodenum of non-malignant, non-cirrhotic origin, reports chiefly from large universities and associated clinics. It has seemed therefore, of interest to review the experience gained of the relative results obtained in the surgical treatment of severe massive bleeding cases in the medical environment of a smaller city with its representative hospital facilities and professional personnel. This report is given in the light of present surgical thinking which can be simply expressed as follows:

1. The greater number of cases of massive bleeding cease spontaneously within a short period of hospitalization.
2. Somewhere around 5 per cent of massive bleeding cases are of such fulminating character that they demand immediate surgical intervention in order to preserve life.
3. In round figures, about 10 per cent of massive bleeders, without the benefit of available surgical intervention will result in mortality.
4. Finally, in approximately 25 per cent of those

cases where sudden massive hemorrhage has ceased spontaneously, severe re-exacerbation will occur within a matter of hours to days.

It is not the purpose, nor is there time in this presentation to discuss the voluminous literature on the subject, but merely to present an analysis of a clinical experience. For purposes of comparison, we have drawn upon the medical records at the Maine General Hospital, service and private, for the periods of 1946, inclusive, through May, 1952. During this period, the handling of problems in massive gastro-duodenal bleeding has been recognized as a joint medical-surgical problem, and a definite routine has been followed. Immediately on admission of a bleeding patient blood is drawn for typing and cross-matching, hematocrit, complete count, prothrombin time, bleeding and clotting time, and thymol turbidity. Blood replacement is started immediately and continued with adequate laboratory control in sufficient amount to restore the blood volume and maintain it within limits acceptable for immediate surgery, should it become necessary. As shock is controlled and the patient's mental state improve, a careful history is taken with particular reference to symptomatology of ulcer, previous X-ray studies, previous episodes of perforation or bleeding, investigating exhaustively

* Presented at the Annual Meeting of the Maine Chapter of the American College of Surgeons, June 25, 1952.

any facts in the history suggestive of portal-system disease. The patient is seen in consultation by the physician and surgeon and followed jointly until the crisis is passed or surgery has been undertaken. As soon as circulatory stability is restored, a brom-sulft halein liver function test is done.

At the Maine General Hospital there was a total of 58 bleeding cases requiring a minimum of one pint blood replacement on admission. Forty-four cases, not excluding those that came to later elective surgery, responded to transfusion and medical treatment. Forty of these were proved by elective X-ray studies to be duodenal ulcer. Fourteen cases came to emergency surgery. Chart I lists the comparison

GASTRO-DUODENAL BLEEDING NON-MALIGNANT - NON-CIRRHOTIC at M.G.H. 1946 - May - 1952		
Total 58	Emergency Surgery 14	Medical 44
Average age	51	53
Average duration symptoms	3.7 years	7 years
Previous bleeding	8	18
Previous Perforations	3	7
Deaths	1	4

One in four Emergency operation.

Chart 1

of these two groups. The small differential in average age of only two years between the two groups is of interest and places the bleeding problem in the middle years. Surprisingly, the average duration of symptoms and incidence of complications, i.e., previous perforation and hemorrhage, were higher in the medical than the surgical group. This implies that the indications for an elective resection deserve more widespread recognition. In this group, 1 in 4 cases, or 25 per cent, came to surgery. There were 4 deaths, or approximately 9 per cent mortality in the medical group, all but 1, however, being complicated by serious systemic disease. One death, or approximately 7 per cent, in the surgical group developed pancreatitis three weeks after emergency resection.

Study of the records revealed that early cessation of bleeding and hemorrhage of a degree controllable readily by transfusion were the two factors placing cases in the medical category. Chart II shows that 23 of the medical group stopped bleeding in twenty-four hours, 5 in forty-eight hours, and 7 in seventy-two hours, the latter two patient-intervals requiring no more than a pint of blood every 12 hours. There were 8 patients who bled for a period of 4 to 8 days; 5, at a rate controllable by one pint of blood a day;

MEDICAL GROUP 44 M.G.H. TRANSFUSIONS		
DU - 40	GU 1	G & DU 1
All in 24 hours	- 23	
All in 48 hours	- 5	No > 500/12 hours
All in 72 hours	- 7	No > 500/12 hours
All in 4 to 8 days	-	No > 500/24 hours except (1 poor risk except 3 (1 age 20 (1 refused surgery
7250 cc - 1 pseudo hemophilia 10 days		

Chart 2

3, who bled more massively had the indicated apparent reason for conservatism; and one bleeder who persisted for ten days showed a blood dyscrasia contraindicating surgery.

For the purpose of studying the emergency surgery of non-neoplastic, non-cirrhotic gastro-duodenal hemorrhage, 29 cases are presented from the Surgical Service of the Maine General Hospital and from private cases of 7 surgeons and records of the Maine General Hospital, Eye and Ear Infirmary and Mercy Hospital for the period from 1942 though May, 1952, inclusive. Chart III shows the age distribution, inci-

OPERATED CASES GASTRO- DUODENAL HEMORRHAGE 1942 - May - 1952 29 CASES						
AGE	Under 20	20-30	31-40	41-50	51-60	Over 61
	1	1	3	8	12	4
Previous bleeding	0	0	1	6 3-F	2	1
Previous perforation	0	0	2	0	1	1
Definite x-ray	0	1 DU	3 DU	4 DU 6 2 GU	4 DU 5 1 GU	1 DU
Died	0	0	1*	0	0	1+

Chart 3 * Pancreatitis
+ Obstruction efferent loop.

dence of previous bleeding and perforation, definite X-ray knowledge, and deaths. The occurrence of 12 cases in the 51 to 60 age group, 8 in the next younger decade, 6 with previous bleeding—3 of whom were women — is particularly worthy of note and would seem to focus our problem rather narrowly in the two decades between the ages of 40 and 60. It is significant that none of these X-ray findings were made on an emergency basis. The highest incidence of known X-ray studies in the age groups with 6 previous hemorrhages indicates that patients with this complication are more likely to be thoroughly studied.

Two deaths in 29 operative cases is a mortality of approximately 7 per cent.

The surgical findings at operation are presented in Chart IV. There were 2 re-resections in the duodenal

SURGICAL FINDINGS

Duodenal Ulcer	19	Later re-resection	2
Eroded vessel	9	Duodenal ulcer	1
		Jejunal ulcer	1
Gastric Ulcer	6	Eroded vessel	5
Gastric and Duodenal ulcer	1		
Gastritis	2	Secondary operation	2
Jejunal Ulcer	1		

Chart 4

ulcer group, 1 six days later with the successful removal of a low posterior wall ulcer not removed initially and 1 twelve days later for successful removal of an early jejunal ulcer with associated mal-function of the efferent loop. Two cases with findings of gastritis, which were subjected to high resection, continued to have exacerbations of massive bleeding and were successfully salvaged by secondary emergency operation, completely devascularizing the residual gastric pouch. It is also worthy of note that one woman with no ulcer history who had had a gastric exclusion for control of a duodenal fistula ten months before — after two major hemorrhages, two negative X-ray studies — was salvaged in an episode of fulminating hemorrhage by excision of an actively bleeding jejunal ulcer, and resection of the remaining antrum. As this chart shows, an eroded artery was demonstrated in 5 of 6 cases of gastric ulcer and in 9 of 19 cases of duodenal ulcer, an obvious commentary that massive bleeding from gastric ulcer is much the more dangerous of the two diseases.

In an attempt to correlate acute symptoms with pathology and degree of bleeding, the data in Chart

ACUTE SYMPTOMS - PATHOLOGY

Hematemesis & Melena	13	6 GU 2 Gastritis 1 Jejunal ulcer	9 DU 6 very massive
Melena	11	1 G & DU	10 DU 3 very massive.

Chart 5

V are presented. Hematemesis in 8 cases with pathology in the stomach and 1 with pathology in an anastomotic jejunal loop, should not necessarily be considered indicative of severity or rapidity of bleeding. There were 9 duodenal ulcers with this symptom — 6 were very massive, 3 were less so. Of 11 patients manifesting melena alone, 3 of 10 duodenal ulcers bled down very rapidly. Hence, it appears that in duodenal ulcer, hematemesis is usually indicative of bleeding at a dangerous rate, but not necessarily pathognomonic.

An attempt is made in Chart VI to detail into

TIME TO OPERATION

Within 24 hours 8 - 5 known duodenal ulcers			
For rapid blood loss	7	2 GU	1 Gastritis
At onset of good medical treatment			1 DU
From 24 hours to 72 hours 16 - 11 known DU			
Continued bleeding	13	2 GU, 1 G+D, 1 jy U	1 Gastritis
Re-exacerbation	2	1 GU	1 DU
Rh negative blood			1 DU
From 72 hours to 6 days 5 - 2 known DU			
Recurrent hematemesis 4th day	1	1 GU	
Steady bleeding 6 days	2	1 previous perforation DU	
" " 4 days	1	GU 20 yrs. history.	
Poor history DU			
Massive recurrence 6 days		1 Inconclusive	
0 Varicies		x-ray	

Chart 6

three periods the time of surgical intervention and the immediate indication. The fact that in 24 cases the decision for surgical intervention was made within 72 hours indicates rather clearly our belief that the persistent severe bleeding, if unarrested, leads to gradual deterioration of a surgical risk in a bleeding patient. Worthy of note is the one patient where abrupt onset of hemorrhage under good medical management was accepted as indication for emergency surgery. In one instance, as shown, the possibility of prolonged transfusion in an Rh negative patient under care in a hospital without an organized blood bank is accepted as a reasonable indication for early surgical intervention. In the 72-hour to six-day group, a 60-year-old man, who had previously been refused for surgery because of lack of X-ray evidence, was on the 6th day successfully subjected to resection of a large bleeding gastric ulcer with an eroded vessel. We are unable to explain the six-day delay in the patient with previous perforation. It is also worthy of note that one of the operative deaths, a 74-year-old male with massive recurrence, was subjected to surgery on the sixth day and died of post-operative small bowel obstruction of the efferent loop,

very possibly related to hypoproteinemia and edema of the loop, favoring the developing of obstruction. Lastly, it should be noted in this chart that in four instances, severe re-exacerbation of bleeding was an indication for emergency surgical intervention. Two of these cases were gastric ulcer.

The correlation of degree of massive bleeding with severity and duration of clinical symptoms is difficult. In terms of blood prior to operation, 11 of our patients received between three and four pints; 5, received from five to six pints; 8 patients received more than seven pints of blood preoperatively, with 6700 c.c. being the largest amount given prior to operation. In the hope of demonstrating the possible relationship between the age of the patient, duration of ulcer disease respectively, and the anticipated severity of bleeding, Chart VII has been prepared. It

CASES RECEIVING 1500 cc at <u>500 cc</u> 6 hours	
6 under 50 years	7 over 50 years
1 M 15 No symptoms DU	1 M 58 Perforated 3 DU months
1 F 42 Symptoms 15 years 3 hemorrhages DU	2 M 60 5 years, prev- DU F 52 ious hemorrhage
2 M 47 15 years + DU M 49	2 M 55 12 years DU M 60 GU
1 M 49 No symptoms gastritis	1 M 52 No history GU
1 F 49 Antral exclusion Previous hemorrhage.	1 M 74 Symptoms one month. DU

Chart 7

details the age and duration of symptoms in 13 patients who required at least 1500 c.c. of blood, at a minimum rate of 500 c.c. in six hours. In the group under 50 years of age, although 3 patients with a 15-year history, one including previous massive bleeding run true to form, the other three—a child with duodenal ulcer, a man with gastritis, and a woman with bleeding jejunal ulcer—present no characteristic symptoms. Among the 7 patients over 50, one man of 58 presents previous perforation, two males, 55 and 60, have symptoms of 12 years' duration, and 2 patients, age 52 and 60, one with previous bleeding, present 5 years of persistent symptoms. Two of the 7, one with gastric ulcer and one with duodenal ulcer offer little characteristic symptoms. The significant fact here shown is that of 9 duodenal ulcers in this group, 7 presented historical data consistent with severe disease, 2 did not. With regard to age, it appears that nothing can be concluded ex-

cept that the majority of severe bleeding cases in this group are closely located around the 50-year age period. While the symptomatology of gastritis, jejunal ulcer, and gastric ulcer are characteristically unreliable, it would seem that we are justified in paying considerable attention to the duration and severity of disease in patients with massively bleeding duodenal ulcer.

CONCLUSIONS

While any statistical conclusions are obviously invalid, certain lessons stand out from experience here reported:

1. The difficult decision of proper treatment for massive gastro-duodenal bleeding must be reached by mutual coöperation of medical and surgical consultants, and on the individual merits of the particular case.
2. The importance of a careful history with special reference to previous X-rays, complete blood and liver function studies, as the practical means of eliminating the non-surgical cases, cannot be over-emphasized.
3. The maintenance of adequate blood volume is the sine qua non of the critical period of decision and requires the services of a well-stocked blood bank.
4. Massive bleeding from known gastric ulcer is a clear-cut indication for emergency surgery.
5. In known duodenal ulcer, re-exacerbation of bleeding in a patient previously satisfactorily controlled by transfusion treatment should be recognized as a clear-cut indication for emergency intervention. Evidences of severity of disease, such as long history, previous perforation and bleeding, are probably more significant in evaluating the likelihood of emergency surgery than the age of the patient.
6. In persistent massive bleeding of 48 hours' duration with adequate clinical and laboratory evidence of absent liver and portal-system disease and blood dyscrasia, surgery is mandatory.
7. Routine elective X-ray studies of all patients with upper GI symptomatology would appreciably simplify the decision in the patient with acute massive bleeding.

Note: The writer wishes to make grateful acknowledgment for the privilege of including their cases in this report to Doctors Carl M. Robinson, Isaac M. Webber, Eugene E. O'Donnell, Louis A. Asali, Howard R. Ives, Eugene P. McManamy, and C. Philip Lape.

VOTE NOVEMBER 4th !!!

SURGICAL TREATMENT OF INTRACTABLE PAIN*

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The relief of pain is one of our most urgent problems in medicine. New drugs, serums and other methods are being developed to aid in the medical treatment, and surgery is constantly advancing in the removal of its causes.

But in spite of these advances, there still remains unrelievable or intractable pain. It is this type with which we are concerned at this time. The surgical procedures for its relief have been largely developed in neurosurgery and require specialized technique. The effects of prolonged unremitting pain on the physical well being and morale of the patient are well known. If the treatment is to be surgical, it should be applied just as soon as it can be determined that the other measures have failed.

The results are not as good, and the risks are much greater, when cachexia, inanition and general debility have developed.

Pain, as you know, is transmitted in the nerves by special fibres which run along with the fibres which transmit the other type of sensation, namely, fine touch, tactile pressure, vibratory sense, pressure localization and discrimination, position sense and passive motion. These all enter in the dorsal roots, go into the spinal cord, and are there distributed into the different pathways. The pain and temperature fibres cross over and go upwards in the cord in the anterolateral spinothalamic tracts of the opposite side. They go directly to the homolateral optic thalamus and from there are relayed to the sensory cortex and to the frontal lobe of the same side. The main motor pathways are situated in the dorsolateral part of the spinal cord and the paths for the transmission of sensations other than pain and temperature are in the homolateral dorsal columns of the cord. These cross over above the medulla to go to the opposite optic thalamus.

In choosing the site for the interruption of the pain pathway, the simplest and least radical procedure should be done first. Alcohol injection is the simplest and sometimes accomplishes satisfactory results. However, the effects are but temporary and sometimes there results a painful neuritis which is as bad as, or worse than, the original pain. The next in order is section or crushing of a peripheral nerve. Common sites for this procedure are:

(1) The nerves of the lower leg for the pain in the toes or foot with obliterative arteritis and gangrene.

(2) Excision of painful neuromas of tender am-

putation stumps. Sometimes satisfactory relief is obtained by this operation, but it is usually necessary to do more. The objection to cutting larger peripheral nerves is that an extremity is rendered practically useless if all of the qualities of sensation are lost. This applies to such locations as the brachial and lumbar plexuses.

Other known procedures, which are forms of rhizotomy, are: (a) Cutting the sensory root of the 5th cranial nerve, for trigeminal neuralgia either by the temporal route, extradural, as popularized by Frazier, Adson and Peet, or intradural, as advocated by Wilkins and as we prefer to do it. Other procedures are: (b) Section of the 9th cranial nerve for glossopharyngeal neuralgia and (c) Cutting the upper cervical dorsal roots for suboccipital neuralgia or for inoperable carcinoma of the face and neck.

Painful sensations from visceral and vascular disturbances of the extremities enter the spinal cord pathways for pain via the sympathetic rami. Examples of visceral pain are, Angina Pectoris, Chronic Pancreatitis, and for the extremities, Raynaud's Disease, Thromboangiitis Obliterans and Intermittent Claudication. For the surgical relief of angina pectoris, the removal of the upper four thoracic sympathetic ganglia have given satisfactory relief of pain in a large percentage of cases from several surgical clinics. Lindgren and Olivecrona¹ in 1947 reported 71 cases with an 8% mortality. Their later experiences seem equally favorable. These patients are potentially serious risks surgically, because of their heart condition. In some cases it is probably safer to use paravertebral alcohol injections but the disadvantages of this method should be borne in mind. The removal of sympathetic ganglia, Lumbar 1, 2, and 3 is the procedure used with vascular disturbances of the lower extremities. The removal of Thoracic 1, 2, and 3, is applied for similar vascular disturbances of the upper extremities. The resultant removal of the sympathetic vasomotor control increases blood supply, removes or diminishes vasospasm and either relieves the pain entirely or at least diminishes it so that it is more amenable to medical measures. It can delay the time for amputation of a gangrenous extremity or lower the level of resection.

My impression from experiences with 82 cases of lumbar sympathectomy is that, although the percentage of cures is not great, enough of them experience relief of pain, even though it may not be permanent, to make it worth doing. In our experience the various tests to try to determine the degree of patency of the arterioles, are not too reliable. In as much as the

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operation of lumbar sympathectomy is not too hazardous a procedure, we advocate its use if there is a reasonable chance of its being helpful in relieving pain or establishing collateral circulation.

If the nerve irritation is extensive and likely to increase or to become bilateral, as in carcinoma in the pelvis, abdomen or lower extremities, it then becomes advisable to sever the pain pathway in the spinal cord. Anterolateral Spinothalamic Tractotomy, or Cordotomy, is a well known surgical procedure, done through a laminectomy either at a high dorsal or low cervical level. The cut is made anterior to the dentate ligament and is limited to the anterior quadrant of the cord. If the cuts are to be made bilaterally, as is usually necessary, because of spread of malignant lesions, they should be staggered two segments apart to lessen the chance for permanent weakness of the extremities and impairment of the bladder function. It usually gives satisfactory relief of visceral and somatic pain to a level of eight segments below the cut. It is likely to result in transient, and occasionally permanent, weakness of legs and bladder, but this seems to be an acceptable price to pay for the relief of the pain. There is about 40% chance of impairment of bladder function with bilateral sections, but this usually clears up in about three weeks. There is often a temporary pain at the operative site. The family should be acquainted with these risks before the operation is undertaken. Our experience with this operation has been 75 cases. The operative mortality was less than 1% but, about 5% of these cases remained in the hospital to die of their cancer, one or more months later.

If the pain is high in the thorax or in the arm or shoulder areas, the cut must be made higher up in the tract. Section in the high cervical regions run the risk of phrenic nerve involvement. Therefore it has proven more satisfactory in our hands to make the cut in the medulla where the motor and pain and other sensory pathways are well separated. Schwartz and O'Leary² in 1941 and a little later White³ in 1941, reported cases showing that spinothalamic tract section at this level was a feasible procedure. We soon began using this method and in 1947⁴ reported 11 cases with 3 operative deaths—2 of them being with bilateral section. We are now reporting an additional 8 cases with one operative death. The level of analgesia in practically all of the cases remained at C2 or C3, with the exception of the last case, where the single cut was not made quite deep enough and the level receded later.

To perform this tract section, a unilateral suboccipital craniectomy is done, preferably under local anesthesia. Enough of the cerebellum is exposed to see the obex, which is an important landmark, and to expose the side of the medulla. Using a narrow bladed knife, made especially for this operation, a

cut is made 1 mm. wide, entering just ventral to the eminence of the spinal root of the 5th nerve and 8 mm. caudad to the obex. The cut is made about 4 mm. deep. This seems to be sufficient to sever the spinothalamic fibres and avoids injuring the other adjacent structures. Ataxia is minimal because the cut is made below the olive and there is a minimum of damage to the ascending spino-cerebellar pathways which are on the surface of the medulla.

A similar operation has been advocated by Walker, making the cut just above the pons. This is called Mesencephalic Tractotomy. We have not tried it, as it seems more difficult to accomplish. However it is a possible alternative method in suitable cases.

When it is desirable to section or destroy the pain pathway higher than the medulla or mesencephalon, it can be accomplished by (a) either destroying the cells in the anteromedial nucleus of the optic thalamus with a modified Horsley-Clarke stereo-tactic instrument or by any apparatus that is capable of circumscribed and controllable cell destruction or (b) by severing or destroying the connecting pathways between the optic thalamus and the frontal lobes. (Leucotomy) This procedure introduced by Moniz in 1929 was popularized by Freeman and Watts in 1937 for mental patients and was later applied for the treatment of intractable pain by Poppen⁵ in 1946, Scarff⁶ in 1948 and others. These procedures being more radical, may result in some undesirable side effects such as mental changes. So they must be weighed carefully before applying them in the treatment of pain. If the pain is severe enough to ruin one's own life and make him impossible to live with, it might be justifiable to pay the higher price for the chance of relief. And even though there may be resultant mental changes, the end result might be preferable to that before the operation. There are various modifications of the Freeman-Watts technique, all aiming to locate and interrupt the essential path from the thalamus to the frontal lobe. It is to be hoped that as time passes, less destruction will be necessary and that the desired results can be as satisfactorily accomplished by electrical or chemical agents, which are less mutilating.

Phantom limb pain is quite a trying problem to treat. The disturbance in most cases is psychic. The simpler procedures, as local nerve block, sympathectomy and cordotomy may have been tried and have failed. The operation of gyrectomy advocated by Mahoney⁷ in 1944 and Poppen⁸ in 1946 removes the motor and sensory cortical areas of the affected limb. The procedure has resulted fairly favorably in enough cases to make it a method to try in stubborn cases.

In conclusion, no procedure has yet been devised for the relief of intractable pain which does not have some disadvantages. As time passes, steady progress is being made. We feel it is our duty to try to relieve

as fully as possible all intractable pain with minimal resultant disability. This falls in the field of neurological surgery. These methods should be applied just as soon as it can be determined that the case is hopeless or that the pain does not respond to the other methods of treatment.

In the more serious operations or where there may result undesirable sequela, the family should be informed beforehand of these and share the risks. Also it should be made clear to them that the operation is solely for the relief of pain and that it in no way promises a cure nor will it prolong the life of the patient. The more radical procedures such as leucotomy should be reserved for certain desperate cases where the disadvantages seem justified.

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THE TREATMENT OF MASSIVE GASTRO-INTESTINAL HEMORRHAGE AS APPLIED TO THE LESIONS OF THE STOMACH AND DUODENUM*

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The two most common causes of massive hemorrhage from the upper gastrointestinal tract are bleeding peptic ulcer and bleeding from an esophageal varix. This presentation will be confined to the patient who has come to the operating room for the treatment of a massive hemorrhage of gastro-duodenal origin.

A decision will previously have been made as to whether a conservative regime is to be followed or that surgery is indicated. These other causes of massive hemorrhage such as acute gastritis, thrombocytopenic purpura, Banti's disease, cirrhosis of the liver and incarcerated hiatus hernia or gastric ulcer associated with hiatus hernia, will have been excluded.

A previous X-ray examination has determined whether or not we are dealing with a peptic ulcer, cancer, gastric polyps or duodenal diverticula. When considering the diagnosis of a bleeding peptic ulcer, it must be remembered that in approximately 25% of the cases there is no previous ulcer history. It will be noted that patients bleeding from a peptic ulcer are usually younger than those who bleed from an esophageal varix. In the absence of leukemia or chronic malaria, a palpable spleen will be helpful in ruling out portal hypertension. The patient then, is likely to be a man over 40 years of age who has not responded to conservative management such as a

Menlengracht diet. Even though a conservative program has reported a low mortality rate, 161 patients so treated at the New York Hospital from the years 1932-1939 showed a mortality rate of 13%. The last 257 patients since 1940, when a policy of immediate intervention was established, has resulted in a mortality rate of approximately 5%.

There are two groups of patients who present a most critical problem, namely: 1. those who continue to bleed for 24-48 hours after they have been placed on a strict medical regime, and 2. those who started to bleed in the hospital while under medical treatment for uncomplicated peptic ulcer. The mortality for those two groups is over 50%. It will be agreed by all as Finsterer has pointed out, that once operation has been decided upon, the sooner it is undertaken the better and the operative mortality varies directly with the duration of bleeding. What then shall be the operative approach upon the patient who most likely is rapidly ex-sanguinating himself from a bleeding peptic ulcer?

There are two approaches to the problem. If the patient is elderly and is in a precarious condition, one will choose to do as little as possible in order to control the bleeding. Vagotomy and gastro-enterostomy will be of little value. A direct attack upon the site of bleeding within the ulcer can be accomplished by incising the anterior duodenal wall longitudinally and exposing the ulcer. Compression of the superior pancreaticoduodenal artery may inhibit the bleeding. If

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this takes place, ligation of it and a purse string suture of the ulcer crater with either catgut or silk and transverse closure of the anterior duodenal wall may be all that one will choose to do. This procedure is not curative and a subsequent resection will be done as an elective procedure.

The second approach is that of gastric resection with removal of the ulcer and is by far a more satisfactory procedure in preventing subsequent ulcer complications. Dissecting the duodenum from the head of the pancreas is likely to be tedious and requires sharp dissection. It is preferable to do this and obtain at least 2 cm. of duodenum distal to the ulcer for adequate closure of the duodenal stump. If the lesion turns out to be a gastric ulcer, resection is much less likely to entail the technical difficulties one encounters in a posterior duodenal ulcer. However, the resection should be fully as extensive even though the chances of recurrent ulcer are less. Whether an anti-colic, retro-colic, Polya, or Hofmeister is unimportant as long as a high resection is accomplished. The speaker prefers a posterior Hofmeister anastomosis. An adequate supply of compatible blood must be at hand for transfusions. A systolic blood pres-

sure of over 100 should be maintained during the operative procedure.

Other methods of handling the duodenal stump such as Judin's "en escargot" technique as described by Cranston Holman and the catheter duodenostomy as described by Allen and Donaldson should be helpful measures in dealing with difficult duodenal stumps.

In summary, the patient who has been selected for surgery for a massive hemorrhage presents a critical problem in surgical judgment. A preliminary differential diagnosis should establish as nearly as possible the site of bleeding; the operative technique should be compatible with the patient's condition; the end result should be better when surgical intervention is judiciously used.

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ACQUIRED HEMOLYTIC ANEMIA — A REPORT OF THREE CASES WITH NEGATIVE COOMBS TEST

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The number of red blood cells in the circulating blood is determined by a balance between production and destruction or loss of erythrocytes. Anemia results when this balance is disturbed either by defective blood formation, abnormal blood loss, or increased blood destruction. In general medical practice, the more common anemias result from iron deficiency and decreased numbers of erythrocytes accompanying blood loss, and specific deficiency states including nutritional anemias, and pernicious anemia. Anemia resulting from increased rate of erythrocyte destruction is far more unusual.

This paper is a review of three cases of acquired hemolytic anemia with negative Coombs tests. Possible diagnostic procedures and therapeutic measures used in this unusual type of disease are briefly discussed.

CASE No. 1

Mrs. A. G. (private patient of C. L. H.), a white female, age 64, following the discovery of diabetes

mellitus on routine office examination in December, 1948, was hospitalized at Maine General Hospital for regulation. In July, 1949, she was hospitalized and treated for lobar pneumonia, receiving penicillin and streptomycin. At that time she had a red blood count of 4,320,000 and a hemoglobin of 85% (12.3 gm.). Following uneventful convalescence she was well until the middle of July, 1950, at which time she began to observe pallor, weakness, dyspnea, and failing vision. Her stools had become dark in color. In August, 1950, she was hospitalized for study of cause of her anemia. General physical examination revealed an extremely pale woman, short of breath and with low energy reserve; a grade II blowing systolic murmur was heard at the left sternal border; blood pressure 110/82; a soft mass was palpated in left upper quadrant, considered to be spleen.

Laboratory work included red blood count of 2,310,000; hemoglobin 45% (6.5 gm.); white blood count 4,600 with 60% segment neutrophils, 5% eosinophiles, 29% lymphocytes, 6% monocytes; blood urea nitrogen 26 mg.%; urinalysis revealed specific gravity of 1.019, albumin 10 mg., white blood cells 100; two stool examinations were negative for occult blood. A sternal marrow biopsy revealed a

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very narrow buffy coat, and a diminution of erythropoiesis. The differential count included myelocytes 12%, metamyelocytes 47%, neutrophils 19%, eosinophiles 8%, normoblasts 15%.

X-rays of the stomach, small bowel and colon were normal.

Blood transfusions totalling 2000 ml. of whole blood were given and patient was discharged on her seventh hospital day, her hemoglobin having risen to 64% (9.3 gm.). She was well regulated on five units of protamine zinc insulin and five units of crystalline insulin, and a diet of 1350 calories, containing 70 gm. protein, 55 gm. fat, and 125 gm. carbohydrate.

The patient felt better for only ten days following discharge from hospital. Her symptoms of weakness and dyspnea returned, and she was rehospitalized on September 22, 1950. Physical examination revealed an extremely ill, tired, pale woman; pulse 90, regular, blood pressure 112/70; temperature 99.2° orally; grade III blowing apical and left sternal border systolic murmur; a soft mass was felt in the right upper quadrant of the abdomen, thought to be liver; a mass barely palpable, in the left upper quadrant was considered to be spleen. Laboratory work revealed red blood count 1,280,000, hemoglobin 29% (4.2 gm.) platelet count 52,000, white blood count 3,900 with 69% segmented neutrophils, 30% lymphocytes, 1% monocytes; total serum bilirubin 1.7 mg.%, 0.6 mg. direct, 1.1 mg. indirect fraction; red cell fragility showed hemolysis beginning at 42% and complete at 27% (normal control identical); brom-sulfalein retention 4% after 45 minutes; stool negative for occult blood; Coombs test negative on two occasions; no agglutination with cold agglutinins; reticulocytes 8%; 25 units free hydrochloric acid in gastric sample after injection of 0.2 mg. histamine base; blood urea nitrogen 38 mg. Modified Fishberg test revealed urine sample with specific gravity as high as 1.024. Prothrombin time was 16 seconds (normal control 17 seconds); bleeding time five minutes; clotting time #1 tube eight minutes, #3 tube ten minutes. On September 27, 1950, a sternal marrow aspiration revealed myeloblasts 2%, promyelocytes 8%, myelocytes 11%, metamyelocytes 16%, neutrophils 15%, eosinophiles 1%, lymphocytes 14%, monocytes 4%, normoblasts 29%. Fecal urobilinogen excretion was 2,300 mg. in twenty-four hours (Dr. Ross' laboratory).

The diabetes was well controlled with 5 units of protamine zinc insulin and five units of regular insulin. Between the twenty-second and the twenty-fifth of September, she received 2500 ml. of blood, the last transfusion containing only red cells because of moderately severe reactions to the transfusions of whole blood. On September 28, the hemoglobin was 60% and the red blood count 3,000,000. By October

1, the hemoglobin had fallen to 52% (7.5 gm.), and the patient complained of weakness and poor vision. The spleen was palpable three fingers' breadth below the costal margin. Ophthalmoscopic examination revealed extensive diabetic vascular retinopathy with multiple hemorrhages, arterial changes and peri-arterial exudates. It was felt that the patient had some type of acquired hemolytic anemia secondary to a "hypersplenic" state with a negative Coombs test. On October 10, the patient was started on Cortisone, 100 mg. daily for eight days. This dose was then reduced to 75 mg. for one day, then to 50 mg. daily for two days. On the ninth day of Cortisone treatment, ACTH was started, 40 mg. daily for ten days. Thus the patient had Cortisone alone for eight days, Cortisone and ACTH combined for three days, and ACTH alone for seven days. On the first day of treatment, the reticulocyte count was 2.6%, this low count undoubtedly representing a response to the previous transfusions. Subsequent counts revealed a daily 1% rise until a maximal count of 7.9% was obtained. During this period the patient showed no evidence of clinical improvement.

On October 17, she was seen in consultation by Dr. Joseph F. Ross of Evans Memorial Hospital, Boston, Massachusetts.

Bone marrow aspiration revealed a very marked hyperplasia of the erythropoietic elements with normal maturation; the granulocytic elements appeared normal in number and activity; the megakaryocytes were definitely increased above normal in number, and appeared to be quite actively producing blood platelets; an increased amount of hemosiderin was deposited in the bone marrow. A third Coombs test was done by Dr. Ross using a high potency serum and was found to be negative.

In preparation for splenectomy the patient was given a total of twelve units of red cells, bringing her hemoglobin to a level of 91% (13.2 gm.). On the night of October 26 (day before proposed surgery), the patient had a severe chill and febrile reaction after the administration of a unit of red cells. Nausea, vomiting, and abdominal distress appeared. On the following morning she was deeply jaundiced, the urine showing a 3+ reaction to the Harrison spot test. Because of the critical nature of her hematologic state surgery was performed despite the jaundice. Under cyclopropane anesthesia, Dr. Emerson Drake removed a main spleen weighing 700 gm. and a golf ball sized accessory spleen. Microscopically the spleen showed marked distension of pulp and sinusoids, occasional zones of necrosis, a marked degree of erythrophagocytosis and the presence of considerable hemosiderin. Biopsy of the liver revealed slight dilatation of the sinusoids, a marked degree of erythrophagocytosis, apparently occurring within the Kupfer cells. A few of the periportal areas

showed a small amount of lymphocytic infiltration.

Prior to surgery a marked change was noted in the severity of glycosuria and hyperglycemia following Cortisone and ACTH therapy. On the sixth day of treatment the urine showed orange reactions despite an increase in protamine zinc insulin to 12 units and of regular insulin to 12 units. On the day before surgery the urine showed a heavy orange precipitate in spite of a total insulin intake of 36 units. Despite a total of 103 units of insulin on the first post-operative day the blood sugar was 275 mg. %.

Subsequently the urine sugar reaction varied from yellow to brown, the insulin intake varying from 90 to 105 units per twenty-four hours. By the tenth post-operative day the insulin requirement had dropped to 15 units.

Prior to splenectomy, the hemoglobin had been elevated to 91% (13.2 gm.) and the hematocrit to 45%. One week after surgery, hemoglobin had dropped to 76% (11 gm.) and reticulocyte count had fallen to 1.6%.

The only surgical complication was extensive, marked ecchymosis of the entire abdominal wall, most prevalent in the wound site. The patient went home on the twenty-third post-operative day.

Following discharge from hospital, the patient had been maintained on an average of one unit of washed red cells a week. She has had a total of twenty-eight units of red cells on an out-patient basis. She has been able to live a normal life, doing her own house work, attending church and social functions, and has felt well, except for a slow increase in her visual difficulties. At present, she is able to read only the large headlines of the newspaper. Her retinæ continue to show extensive vascular changes with hemorrhages and exudates. A recent Coombs test was negative.

The final impression is that this patient had an acquired hemolytic anemia with a negative Coombs test, complicating diabetes mellitus with secondary vascular deterioration and vascular nephritis.

Note: Since the original writing of this paper, patient had a rather abrupt increase in the severity of her anemia which could not be controlled by giving 8 pints of red cells in a five-day period. Clinical and laboratory evidence of severe uremia were present the last few days before her death. Permission for autopsy was not granted.

CASE No. 2

A. K. McD. (private patient of C. L. H.), a 44-year-old white, married male was first seen August 13, 1948, because of a rapid onset of severe weakness and pallor. Past history revealed that patient had had a biopsy of a cervical lymph node in 1940, diagnosed

as Hodgkin's granuloma. Chest X-ray at that time had shown mediastinal adenopathy thought to be on the same basis.

Between 1940 and 1948, he received a total of 13,200 roentgen units to the abdomen because of recurrent bouts of weakness and signs of anemia. Abdominal Hodgkin's as an explanation of the signs and symptoms seemed to be purely conjectural since no adenopathy was reported at these periods. Present illness dated five days before entry to Mercy Hospital, at which time patient observed a rapid onset of weakness, fatigue, dyspnea, and pallor.

Physical examination revealed his height to be five feet, eleven inches, weight 170 pounds, temperature 98.4° orally, pulse 98, respiration 18, blood pressure 112/60. The sclerae were icteric, the pupils round, regular and equal, and reacted to light and accommodation. A healed scar was present in the right lower neck region. A diffuse icterus was superimposed on a generalized pallor. On the lower left lateral thorax, a patch of healed skin lesions was seen, which was suggestive of healing herpes zoster. The lungs were clear and resonant, and the diaphragms moved well. The heart rate was 98/minute, rhythm regular and no murmurs were heard. No masses were demonstrated and the liver was not palpable. X-ray of the chest was normal.

Laboratory work included red blood cells, 1,940,000, hemoglobin 37% (5.3 gm.), color index 0.9, white blood cells 7,250, 76% polymorphs, 23% lymphocytes, 1% eosinophiles. The red cells on smear showed basophilic stippling and considerable polychromasia, reticulocytes 15%. Icteric index was 12 units. The red cell fragility showed beginning hemolysis in 0.35% and complete in 0.30% saline concentration. The test was not performed on blood incubated at 37°C. for 24 hours. The urine was amber, acid, with specific gravity 1.012, no albumin, or sugar, the sediment containing rare leukocytes, negative for occult blood. The stool was also negative for occult blood. Urine urobilinogen was present in 1:4,000 dilution. Prothrombin concentration was normal, cephalin flocculation test negative, thymol turbidity 0.30 units, Coombs test negative. Abnormal agglutinins could not be demonstrated at the end of twenty-four hours in serum at incubator temperature, room temperature, or refrigerator temperature.

During the first week in the hospital he received eight pints of whole blood. 600 r of X-ray were delivered to the spleen in an effort to decrease the hemolytic process. Despite the transfusions, the red blood cells were 1,990,000 and the hemoglobin 36% (5.2 gm.) on August 21. At no time was the spleen palpable, although the left lobe of the liver became barely palpable. Although a number of tests for bili-

rubin in the urine were negative during the first week, on August 20, a 4+ test for bilirubin was obtained by the Harrison and diazo spot methods, indicating that some of the jaundice was of the direct type. Dr. Isaac Webber performed an emergency splenectomy, removing a 320 gram spleen. 4,000 ml. of whole blood were given during surgery, four transfusions running simultaneously. No accessory spleen was seen. A biopsy of a grossly enlarged liver was taken. Microscopic examination of the spleen revealed very pronounced hemosiderosis, congestion of the sinusoids, a slight increase in the number of polymorphonuclear leukocytes, and fibrosis in a minimal degree. Microscopic examination of the liver revealed nothing more specific than "swelling."

Post-operatively the patient did well. After three days the bilirubin disappeared from the urine, the urobilinogen gradually diminished so that at the end of ten days it was positive in only a 1:20 dilution. Bromsulfalein retention was 12% after 45 minutes. On the second post-operative day the red blood count was 3,090,000, hemoglobin 58% (8.4 gm.) and the white blood cells 14,600. Within three weeks, without further transfusion, the red blood cells rose to 4,000,000 and the hemoglobin to 75% (11.0 gm.).

After leaving the hospital the patient did well until December, 1948, when he again began to feel tired and lose his appetite. The liver was palpable and extensive spider angiomas were seen on the shoulders and upper chest. No peripheral adenopathy was seen. The laboratory work at this time included red blood cells 3,900,000 and hemoglobin 79.9% (11.6 gm.); white blood cells 12,200 including 11.6% monocytes; urine urobilinogen 1/640; a 4+ test for bilirubin; and icteric index of 18 units, bromsulfalein retention 68% in 45 minutes. The possibility of Hodgkin's invasion of the liver was considered and the patient was given 1,700 r to the right upper quadrant of the abdomen.

After this he felt better and his strength and appetite improved. By the end of January, 1949, he felt worse and the jaundice again deepened. 1,600 r were given to the right upper quadrant, but the patient felt worse and showed deepening jaundice. His appetite was poor and frequent loose stools appeared. A medical regime for cirrhosis was started, with high carbohydrate, high protein diet, water soluble Vitamin K, injections of crude liver, large amounts of Brewer's yeast and skimmed milk powder, and complete rest. By the end of March the liver was enlarged to 5 or 6 cm. below the costal border; 39% of bromsulfalein was retained, the thymol turbidity was positive for 34 MacLagan units, and the thymol flocculation was 4+ after 24 hours. The serum had the deep green color of increased biliverdin. During the next few months, the

patient showed gradual improvement although the number of spider angiomas increased and typical "liver palms" appeared. On December 23, 1949, he was readmitted to Mercy Hospital following a three-weeks' period of excessive thirst, frequency of urination, nocturia, severe headache, and a throbbing sensation throughout the entire body, especially in the head. The blood pressure was 200/110. Dehydration was present to a marked degree. The retinæ were edematous. Examination of the heart revealed a strongly reduplicated M1 and a loud pericardial friction rub. Urinalysis revealed 200 mg. of albumin, numerous red blood cells and a myriad of granular casts. The blood urea nitrogen was 71 mg.%, but dropped to 33 mg.% after a week of intensive intravenous fluid therapy. Despite this drop, the pericardial friction rub became louder each day until four to five days before death, at which time it disappeared, concurrently with the appearance of generalized edema. He died on January 10, 1950. Autopsy by Doctors Meservy and Porter of the Department of Pathology of Maine General Hospital revealed gross evidence of polyserositis, involving the pleura, pericardium, and peritoneum; hemorrhagic pericarditis; pulmonary edema, and cirrhosis of the liver. Microscopically the normal architecture of the liver was obscured by large areas of fibrous tissue interspersed among the lobules. There was bile duct proliferation, and in some areas fatty replacement of the liver cells. There was considerable brown pigment in the central areas and lymphocytic infiltration in the periportal areas.

The most important microscopic feature of the kidneys was an obliterative endarteritis involving mainly the interlobular arteries. There was also some intimal proliferation and slight edema of the media which progressed in some areas to obliteration. There were many scarred and hyalinized glomeruli, and in the collecting tubules many hyalin, granular, and cellular casts. There was no wire looping demonstrable. Sections of the hilar lymph nodes showed anthracotic pigment and some large cells, probably representing histiocytes, some hyalinization and destruction of the normal architecture. A few large cells with lobulated nuclei resembling Reed-Sternberg cells were seen.

The kidney lesions were thought to represent a diffuse obliterating endarteritis consistent with that secondary to roentgen ray reaction. The patient had had a total of 19,500 r delivered to various sites in the upper abdomen.

CASE No. 3

Mrs. M. G., a 65-year-old house wife, was seen at the clinic of the Maine Eye and Ear Infirmary in 1940, because of a perforated nasal septum. Positive Kahn and Hinton tests (4+) were found at that

time. She had had one pregnancy in 1919, and no abortions. In 1940, she was said to have had pallor, increased fatigue, frequent dizzy spells in the morning, and frequent headaches. Her pupils and peripheral reflexes were said to be normal. She was treated with bismuth subsalicylate and potassium iodide, and had continued the bismuth injections regularly until the time of admission. According to her medical records she was started on a course of ten weekly injections of liver, 1 ml. each in September, 1948. There is no report of her blood count at that time. In December, 1949, following a brief attack of the "flu," she began to notice attacks of dizziness, light headedness, and dyspnea on exertion which gradually increased. At that time the blood Kahn and Hinton were both 4+ and the quantitative Kahn 32 units. Between April 20, and May 18, 1950, she received four weekly injections, each $\frac{1}{2}$ ml. of liver extract. At the end of this time she discontinued treatment as it was too much effort for her to come to the clinic. Her strength and appetite deteriorated rapidly and she had been confined to bed for ten days before admission.

She had also had frequent attacks of precordial pain relieved by nitroglycerine. On admission to the medical service of the Maine General Hospital on June 1, 1950, she also had frequent attacks of palpitation and some nocturnal dyspnea.

Physical examination revealed a somewhat obese white woman in slight respiratory distress, with skin faintly tinged yellow. The pupils were round, regular, and equal, reacting well to light and accommodation. Yellowish exudate was present on the lids of both eyes (rapidly clearing on treatment of sulfacetamide ointment). The tongue was fairly smooth, but not typical of that seen in pernicious anemia. Moist rales were in both lungs. The heart was somewhat enlarged, rate 80, and a grade II systolic murmur was audible at the apex and along the left border of the sternum. The abdomen was normal except that the liver was palpable about 3 to 4 cm. below the costal margin. Abdominal examination by several observers failed to reveal the presence of a spleen on the first few days after admission. However, on the sixth hospital day the spleen was definitely palpable, extending 6 cm. below the costal margin. Neurological examination revealed absent vibratory sense in both legs and in the left arm. Position sense was present. Her initial blood picture was: red blood cells 730,000, hemoglobin 20.6% (3.0 gm.), white blood cells 5,950, hematocrit 12, M.C.H. 30, differential count 83% polymorphs, 1% lymphocytes, 2% monocytes, 14% undefined cells. Icteric index was 50 units. Gastric analysis showed no free hydrochloric acid, total acid 35° in the largest specimen, after histamine, and no occult blood. The total protein was 5.2 gm., albumin 3.9, globulin 1.3

gm. Bone marrow was reported typical of pernicious anemia, with a predominance of megaloblasts. She received 2 ml. of liver (30 units) and also 500 ml. of whole blood. The following morning the red blood count was 1,210,000 hemoglobin 27.6% (4 gm.), white blood cells 6,250, and reticulocytes 51%. Because of episodes of cardiac decompensation she received 250 c.c. of whole blood on two occasions, but the red blood count rose only to 900,000 after one week of hospitalization. As her condition remained critical she was then treated with larger amounts of blood, receiving a total of 4000 ml. in the next six days. By then her red blood count had risen to 3,300,000, with hemoglobin 65.5% (9.5 gm.), 6,250 white blood cells, and a drop in reticulocytes to 20.1%. Red cell fragility test showed hemolysis of both control and test cells at 0.42% concentration of saline. The test was not performed on incubated blood. Direct and indirect Coombs tests were negative. Total bilirubin concentration was 10 mg., with direct 5.4 mg., and indirect 4.6 mg. Upper gastrointestinal series and X-ray examination of the vertebrae and pelvis were normal. A chest film showed changes interpreted as consistent with pulmonary edema.

Because of a febrile course, with temperatures up to 101°, she received procaine penicillin, 300,000 units daily for two weeks, with no change in the course of the fever. Following an episode of cardiac decompensation she was digitalized and maintained with 0.1 mg. digitoxin daily.

Blood volume studies (Evans Blue Dye) revealed a total blood volume 7300 c.c. red cell volume 2700 c.c. and plasma volume 4600 c.c.. The excessive plasma volume was treated by mercurial diuretics, but in spite of this, the red blood count continued to drop.

On July 7, 1950, a 795 gram spleen was removed and a liver biopsy was performed. She received 500 ml. blood during the procedure and seemed to tolerate it well. Microscopic examination of multiple sections of the spleen revealed moderate to marked degree of congestion, the sinusoids being distended by red cells. There was also phagocytosis of hemosiderin and occasional deposits of hemosiderin in the stroma. No foci of hematopoiesis were seen. Two areas of infarct were present. The liver was essentially normal.

Her post-operative course was complicated by febrile episodes on the sixth day, probably the result of bronchopneumonia. This cleared after penicillin therapy. The red blood count continued to drop reaching a low of 2,300,000 on July 18, then remaining stable at that level. Bone marrow examination on July 27, revealed 33% normoblasts and was interpreted as suggestive of continued blood destruction.

She was discharged from the hospital on August 16, 1950, but readmitted August 23, because of exertional dyspnea, orthopnea, and ankle edema. She improved markedly following digitalization and ammonium chloride therapy. During the next ten months, her red blood cells rose to 4,200,000, the hemoglobin to 89.6% (13 gm.) without benefit of transfusions. When last seen in the clinic on June 18, 1951, her red blood count was 3,370,000, the hemoglobin 75% (10.9 gm.). She has continued to receive digitoxin and ammonium chloride since discharge from the hospital.

DISCUSSION

Since the hemolytic anemias are incompletely understood at the present time, there is no classification which is entirely satisfactory. Hayden's division⁸ into a group caused by increased hemolysis from damage to normal cells by foreign agents, and one caused by increased activity of the spleen is a simple one that is therapeutically useful. A more complex classification is that of Dameshek and Schwartz:⁴

A. Hemoglobinurias

1. Paroxysmal cold
2. Paroxysmal nocturnal
3. March
4. Favism
5. Unclassified

B. Hemolytic Anemias

1. Hereditary
 - a. Spherocytic
 - b. Target cell
 - c. Sick cell
2. Acquired
 - a. Chemical
 - b. Immune body
 - c. Idiopathic (including the hypersplenic types)
 - d. Symptomatic or secondary

Our cases seem to fit best in to the groups of acquired anemias. The first case probably represents the idiopathic type, although it could conceivably be secondary to diffuse vascular disease consequent to diabetes mellitus. The second case suggests the symptomatic variety, secondary to Hodgkin's Disease, although there is little evidence that the Hodgkin's disease was "active" at the time. Herpes Zoster seems a very remote possibility. A third consideration would include early renal failure, not demonstrated at the time. The third case is not definitely classified, as it may be the result of the previous bismuth injections, or the inadequately treated syphilis. It may also have been of the idiopathic type. Diffi-

culty in precise classification is obvious. Although Ehrlich's and Donath-Landsteiner tests were not performed, a diagnosis of paroxysmal cold hemoglobinuria seemed untenable in view of a lack of paroxysmal symptoms stimulated by exposure to cold, absence of dark or bloody urine and failure to demonstrate increased amounts of hemoglobin or hemoglobin products in the serum.

The diagnosis of hemolytic anemia is generally made on evaluation of laboratory examination. While the patient's history is not diagnostic, a number of important facts must be ascertained. Familial history is of great importance if positive, although a negative history does not preclude familial anemia since often the patient is not aware of the causes of death of relatives remote in time or distance. An accurate drug history should be obtained since such commonly used compounds as the sulfonamides, quinine, acetanilid, phenol compounds, pyrimidon and lead may lead to hemolysis.

During the examination of the patient one must also consider liver disease, the leukemias, Hodgkin's disease, lymphosarcoma, metastatic carcinomatosis, ovarian tumors, and dermoid cysts as possible causes of the symptomatic variety. Physical findings that are common include pallor, slight icterus, functional cardiac murmurs, splenomegaly, and perhaps hepatomegaly. Either microcytosis or macrocytosis may be present. Reticulocytes are increased in number as high as 50% in severe cases. Leukocytes are generally normal or slightly increased, but leukopenia is often seen in the acquired types. Immature leukocytes may be present in acute attacks. Bone marrow characteristically shows normoblastic hyperplasia but in severe cases (Cf. case 3) the erythropoietic elements may revert to such an embryonal stage that a differentiation from the megaloblastic pernicious anemia is difficult. Icteric index is elevated to 15 or 20 units, and may be higher in acute cases. Excretion of urobilinogen in urine and feces is singly the most accurate measurement of red cell destruction and is extremely useful. Finally, in the acute cases requiring blood transfusions, lack of response should lead to the suspicion of increased destruction of cells.

The hereditary anemias with characteristic family history, increased red cell fragility, and abnormal cell form usually present an early recognised entity. If, however, it can be demonstrated that a patient has a chronic hemolytic anemia, and secondary types can be eliminated, it is of therapeutic importance to differentiate between chronic congenital hemolytic anemia and the acquired type. This is essential because the results of splenectomy are usually satisfactory in the congenital type and often unsatisfactory in the acquired cases. The effect of pituitary corticotropin (ACTH) is stated to be of more value in the acquired type than in the congenital.^{1, 3, 5, 6} The following

differences between the two types are helpful in making this decision:

(1) Spherocytosis is present in all cases of the congenital anemia and in some of the acquired types.

(2) Increased fragility is almost always present in congenital anemia and in about 40% of the acquired types. If an abnormal test is not obtained with fresh blood, it should be repeated on blood allowed to incubate at 37° C. for 24 hours.¹¹

(3) White blood count is normal in the congenital cases which leukopenia is common in acquired ones.

(4) The congenital disease becomes active in infancy or childhood in most instances, while the acquired anemia is more common in the older age groups.

(5) The Coombs test for blocking antibodies is an important test in the study of hemolytic anemia. Although published information on this test is scant, it is commonly positive in acquired hemolytic anemias of various types.^{11, 2, 7} It is rather uniformly positive in hemolytic anemia due to Rh sensitivity and in many idiopathic acquired hemolytic anemias. It is also occasionally positive in the familial form,^{9, 10} though in general it serves to separate these two types. Although our three cases all had negative Coombs test a diagnosis of acquired hemolytic anemia seems justified in each one. The reports on this test have been quantitatively insufficient for evaluation, and our experience may have been unusual. Statistics of larger series are certainly needed.

Although none of these differences between congenital and acquired hemolytic anemia is absolute, together they form the basis for the decision of classification.

Since splenectomy in congenital and in some acquired hemolytic anemias leads to a complete remission, the spleen must be considered an important factor in the etiology of these conditions. The exact nature of the mechanism is, however, open to speculation. Though splenectomy is less often successful in acquired than in congenital forms it is often justified in the former as it may offer marked improvement or complete return of the blood to normal. In our three cases a measure of success was obtained by splenectomy, two being able to maintain an adequate level of red cells, the third improving to the extent that maintenance by means of periodic blood transfusions was temporarily feasible.

Dameshek et al.⁵ and later Gardner et al.,⁶ Davidson et al.³ and Best et al.¹, report successful treatment of acquired hemolytic with adrenocorticotrophic hormone. In these series, totalling eleven cases, some improvement was obtained in all. However, in one

of Dameshek's cases salt retention and pulmonary edema led to discontinuation of treatment, while one of Best's cases died of pneumonia while under treatment. Two cases of congenital hemolytic anemia reported by Davidson did not have a favorable response. In our experience only case No. 1 was treated with the hormone, with no evidence of clinical improvement nor rise in the blood count, but with apparent aggravation of pre-existing diabetes. In an additional experience, an elderly man with lymphatic leukemia, comparison of the effect of transfusions before and after ACTH therapy revealed a marked effect. However, he died of intercurrent pneumonia, and a diagnosis of hemolytic anemia was not definitely established.

SUMMARY

Three cases of acquired hemolytic anemia with negative Coombs test have been presented illustrating the necessary diagnostic tests, and possible forms of treatment.

The Coombs test was negative in all of these cases, and therefore, did not aid in the diagnosis.

Adrenocorticotrophic hormone was of no benefit in the one case.

Splenectomy was of some value in all three cases.

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A PARCEL FOR POISONINGS

WARREN G. STROUT, M. D., and CLEMENT S. DWYER, M. D.*

The prompt and efficient treatment of acute poisoning demands accurate information, specific antidotes and proper apparatus. Experience has shown that frequently one and occasionally all of these essential components for treatment may not be readily available when urgently needed.

We have designed a kit for emergency room use which contains this important material. By selecting antidotes common to several poisons a compact and easily transported kit has been devised. In this single container, the intern or attending physician may select:—

1. A list of commercial names of over five hundred household, garage, barn and other easy to reach items containing poisonous agents.¹
2. A table of antidotes, recently revised.^{2, 3, 4}
3. Specific antidotes or supportive treatment for all common and many rare poisons.
4. The necessary equipment for the administration of the antidotes.

Construction of the Container

The box is made from light pine and plywood and is thirty-six inches in length, eighteen inches wide and six inches deep. It is suitably compartmented as shown in figure 1. The contents are more easily seen and selected if the compartments are shallow and the larger bottles placed in the rear of the box. A slot is prepared in the cover of the box which provided storage for the antidote table, the list of commercial products containing poisons, and a table of contents of the box. A list of general rules for the treatment of poisoning and a table for the preparation of solutions is pasted on the inside cover and may be seen in figure 1. Sturdy latches and carrying handles complete the container.

Antidotes

The list of antidotes was selected from several authoritative references. Since it would be impossible to include every suggested antidote in a project of this kind, antidotes common to the greatest number of poisons were chosen. The kit for treatment of cyanide poisoning described by Chen and Rose⁴ was incorporated as well as the universal antidote for unknown poisons.

1. Apomorphine gr. 1/10
2. Aminophyllin gr. 3¾ and 7½ ampoules

* Eastern Maine General Hospital, Bangor, Maine.

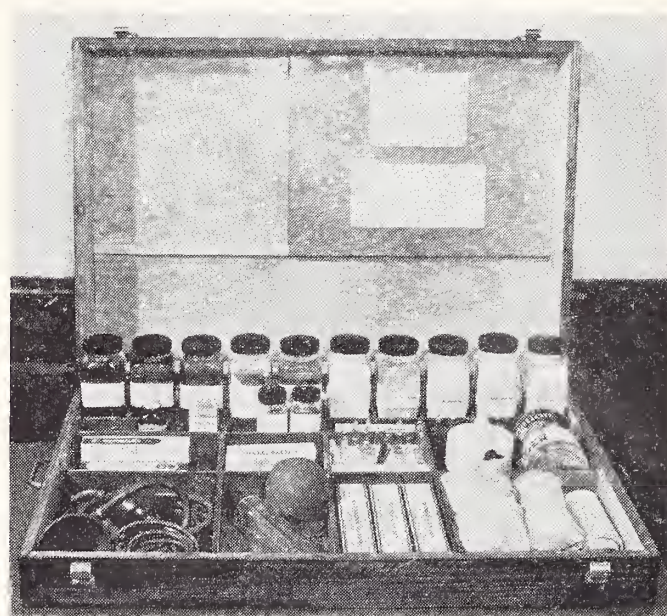


Figure 1.

3. Amyl Nitrite perles
4. Atropine sulphate gr. 1/60
5. BAL in oil 10% 3 ampoules 4.5 c.c./amp.
6. Caffeine gr. 7½ 1 c.c. ampoules
7. Calcium Chloride gr. 15½ ampoules
8. Calcium Gluconate 10%—10 c.c. ampoules
9. Copper sulfate crystals
10. Coramine 25% 1.5 c.c. ampoules
11. Charcoal
12. Dextrose in water 50%—50 c.c. ampoules
13. Ephedrine gr. ¾ 1 c.c. ampoules
14. Epinephrine 1:1000 1 c.c. ampoules
15. Limewater
16. Magnesium oxide
17. Magnesium sulphate ampoules 50% 2 c.c. ampoules
18. Magnesium sulphate oral
19. Methylene Blue 1% 50 c.c. ampoules
20. Metrazol 25% solution 3 c.c. ampoules
21. Milk (evaporated) 1 can
22. Mineral oil
23. Pentothal gm. 1 with sterile water
24. Pilocarpine gr. ¼
25. Picrotoxin 20 c.c. (1 c.c.—3 mg.)
26. Potassium permanganate tab. gr. III—50 tablets
27. Prostigmine 1:2000 1 c.c. ampoules
28. Sodium bicarbonate
29. Sodium formaldehyde sulfoxylate gm. 10. with sterile water, 2-20 c.c. ampoules
30. Sodium Hyposulfite 50 c.c. ampoules (2%) 3 ampoules.
31. Sodium Thiosulphate 10%—10 c.c. ampoules. 3 ampoules
32. Starch
33. Tannic acid powder
34. Universal antidote
35. Vinegar

Continued on page 338

THE PRESIDENT'S MESSAGE

Centennial Session — June 21 - 24, 1953

In view of the number of anticipated speakers at our Centennial Celebration, the committee at a recent meeting in Augusta, voted to extend the session through Wednesday, June 24th. The Eastland Hotel has been reserved for headquarters for this meeting, which will get underway Sunday noon, June 21st and conclude with the annual banquet Wednesday evening, June 24th.

It was planned to hold a Centennial Observance Sunday evening with invited guests from outside the profession. The program to feature Biographical Historical presentations and music.

Dr. C. Lawrence Holt of Portland, Chairman of the Centennial Committee, has appointed Dr. Thomas A. Foster of Portland, Chairman of the Historical Research Committee, and Dr. Carl E. Richards of Sanford, Chairman of the Scientific Exhibit Committee. These appointments were approved by the Centennial Committee, who further authorized Dr. Holt to appoint a Chairman for an Entertainment Program Committee.

EUGENE H. DRAKE, M. D.,
President, Maine Medical Association.

THE EDITORIAL BOARD AND THE JOURNAL

On September 10, the Editorial Board held a meeting at the Tarratine Club in Bangor. The Editor of the JOURNAL, the Secretary-Treasurer of the Association, Mrs. Kennard, and the Executive Secretary, Mr. Payson, met with the following members of the Board: Dr. Eugene E. O'Donnell of Portland (First District), Dr. Richard C. Wadsworth of Bangor (Sixth District), Dr. Ralph P. Earle of Vinalhaven (Third District), and Dr. Charles W. Capron, Jr. of Eastport (Fifth District). Dr. Arch H. Morrell of Augusta (Fourth District) and Dr. Waldo A. Clapp of Lewiston (Second District) were unable to be present.

The meeting, we believe, proved to indicate a lively interest in our JOURNAL and a desire to make it representative of the best medical thought in the State.

The Order of Business included eleven items of special interest and the discussion of each item brought forth frank and constructive comments. It is not the purpose of this report to review all discussions but rather to present some conclusions which were reached regarding general policy.

It was agreed that the present plan of publishing "Hospital Issues" merited approval and should be continued for the present. The Board expressed appreciation of the efforts made by hospital Staff members and especially for the local Agent representing the Staff. It was agreed, also, that the JOURNAL should remain an organ for members of the Maine Medical Association and that articles from our own members should have first consideration for publication.

While it was the general opinion that members of the Maine Medical Association should be encouraged

to submit articles for publication in the JOURNAL, it was the opinion, also, that they should assume more responsibility for correcting proofs of manuscripts and for prompt return of corrected proofs. The Board is endeavoring to have the JOURNAL appear during the early days of the publication month. Consequently, it was agreed that we have a "Notice to Authors," which will be attached to each set of proofs when mailed from the JOURNAL office. This notice will include information relative to corrections, deadline date for return, reprint rates, and an order blank for reprints, which is to be filled in and returned with corrected proofs — if reprints are desired. It was further agreed that we change our deadline date for receipt of articles to the First of the Second Month preceding publication, i.e., articles for the December issue should be in by October 1st, etc. This will, of course, take time but when accomplished will give those responsible for the JOURNAL a chance to do the work required prior to publication without undue pressure, and will assure an earlier publication date. It will also help keep the cost of printing at the lowest possible level. It would take considerable space to go into all the details of what happens to an Article, as well as miscellaneous material, from the time it is received to the time of publication; suffice it to say that the processes are numerous and time consuming.

The President's Page was discussed and it was the consensus of opinion that material submitted for publication by the President is of interest to every member of the Association and would be read if made a part of the Editorial Section, instead of on the customary full page with considerable margin. So in the

future this section will carry a message from your President when interests of the Association require the individual members and county secretaries can be of assistance; the individual members by sending personal items of accomplishments, professional or otherwise; the county secretaries by prompt reporting on at length. It was agreed that these sections of the JOURNAL are of particular importance to members of the Association and that every effort should be made to keep them up to date and timely. This is where it.

This covers some of the major portions of the discussion. In addition the County Society Notes, Necrologies, News and Notes, etc., were commented

of county meetings, changes in membership and notification of deceased members.

The Board gave careful consideration to other items of less immediate importance and offered constructive criticisms to the Editor. We plan to keep the members informed of our program and we bespeak your cooperation in behalf of our endeavor to have the JOURNAL appear at an earlier date and to make it a representative one.

The JOURNAL contains the History of your Association—each volume is bound and kept on file in the Association's office. The Editorial Board would like to have every member share in making this history a comprehensive and accurate account of accomplishments of the Medical Profession in Maine.

AMA INSTITUTE ON PUBLIC RELATIONS

AMA offered its first Institute on Public Relations on September 4th and 5th at Chicago. It was notable in that it was presented by men working in medical public relations, describing programs that have been in operation and found feasible and beneficial, to those people whose duties are almost entirely in that field. A very practical operation.

Seemingly outstanding were two proposals that can hardly be controversial, yet, if undertaken, will inevitably increase the interest of members in their own organization, and bring about better understanding between the people and the doctors.

First is the program intended to teach new members what AMA, their State, and County Societies, are trying to do and are doing; the activities and purposes of organized medicine; ethics, and the reason

behind ethics; and practical hints on practice. It carries a long name, indoctrination (or orientation) of new members, but it teaches what I said above and it results in members who are willing to serve and help carry out even better the purposes of the organization.

A code of press relations, worked out with working newspaper men, helps cordial relations with the press and radio. Even a session or two when doctors and editors sit down together and talk quite plainly in words of one or two syllables helps to give each a viewpoint that is novel and enlightening. If carried through to working together to arrive at some practical code on major points it eliminates many barriers and helps both sides in their work.

WOMAN'S AUXILIARY TO THE MAINE MEDICAL ASSOCIATION THE FALL MEETING IN WATERVILLE OCTOBER 26 AND 27

With the plans for our Fall meeting in Waterville becoming more crystallized, I feel more and more enthusiastic about the event! Our capable committee from Kennebec County, under the leadership of Mrs. Francis H. Sleeper, Mrs. Richard H. Dennis and Mrs. Irving I. Goodof, have planned several grand things to off-set the business meeting at 10.00 A. M., Monday, October 27th. Their plans will give us all of Monday afternoon to become better acquainted with one another as well as with doctor's wives who are not members. We feel that this is going to be an excellent opportunity for non-members to learn about the work of the Auxiliary and how its members are helping to create a better understanding between the public and medical profession.

Mr. Edmund P. Wells, President of the Health Council of Maine, will be guest speaker at the luncheon on Monday which will honor past-presidents and presidents of other New England States. A gala tour of Colby College Campus and the new Thayer Hospital will be on the Agenda for the afternoon "get acquainted" program, which will be followed by dinner with our husbands.

I shall be looking forward to seeing you all on the 26th and 27th at the Elmwood Hotel. Board Members—please remember the Board Meeting will be on Sunday, October 26th, at 3.00 P. M.

MRS. PHILIP B. CHASE, *President,*
Woman's Auxiliary to the
Maine Medical Association.

COUNTY SOCIETIES

Androscoggin

President, Alcid F. DuMais, M. D., Lewiston
Secretary, Paul G. Lemaitre, M. D., Auburn

Aroostook

President, Clement L. Donahue, M. D., Caribou
Secretary, Clyde I. Swett, M. D., Island Falls

Cumberland

President, Thomas A. Martin, M. D., Portland
Secretary, Ralf S. Martin, M. D., Portland

Franklin

President, Wallace H. Duffy, M. D., Farmington
Secretary, Paul E. Floyd, M. D., Farmington

Hancock

President, Silas A. Coffin, M. D., Bar Harbor
Secretary, Arthur M. Joost, Jr., M. D., Bucksport

Kennebec

President, Francis H. Sleeper, M. D., Augusta
Secretary, Arch H. Morrell, M. D., Augusta

Knox

President, Gilmore W. Soule, M. D., Rockland
Secretary, Robert L. Allen, M. D., Rockport

Lincoln-Sagadahoc

President, John F. Dougherty, M. D., Bath
Secretary, M. W. Westermeyer, M. D., Bath

Oxford

President, Edward L. Reeves, M. D., Lewiston
Secretary, Dexter E. Elsemore, M. D., Dixfield

Penobscot

President, Wesley C. McNamara, M. D., Lincoln
Secretary, Herbert C. Scribner, M. D., Bangor

Piscataquis

President, Linus J. Stitham, M. D., Dover-Foxcroft
Secretary, George C. Howard, M. D., Guilford

Somerset

President, H. Carl Amrein, M. D., Madison
Secretary, Niles L. Perkins, Jr., M. D., Bingham

Waldo

President, Ernest W. Stein, M. D., Pittsfield
Secretary, Raymond L. Torrey, M. D., Searsport

Washington

President, DaCosta F. Bennett, M. D., Lubec
Secretary, Karl V. Larson, M. D., East Machias

York

President, Kenneth J. Cuneo, M. D., Kennebunk
Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Hancock

A meeting of the Hancock County Medical Society was held at The Hancock House, Ellsworth, on September 10, 1952. There were ten members and the guest speaker present.

Dr. James H. Crowe of Ellsworth, was elected delegate to the Maine Medical Association, and Dr. Philip L. Gray of Blue Hill, alternate.

An informative and interesting talk was given by Dr. John A. Woodcock of Bangor, on The Differential Diagnosis of Limp in Children. X-rays were shown to illustrate cases.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Kennebec

Dr. John O. Piper of Waterville, was elected President of the Maine Heart Association, at a meeting of the Board of Directors, September 23, 1952.

Dr. Piper is a charter member of the Association and is a past president of the Maine Medical Association.

Knox

Dr. Anna Platt of Friendship, will be leaving soon for Florida where she will remain until April 15, 1953. Her winter address is, 311 Druid Road, Clearwater, Florida.

Lincoln - Sagadahoc

A meeting of the Lincoln-Sagadahoc County Medical Society was held at the Bath Country Club on Tuesday evening, September 16, 1952. There were eleven members, two dentists and the guest speaker present.

Dr. Francis A. Winchenbach of Bath, was elected delegate to the Maine Medical Association, and Dr. Arthur A. Nichols of Wiscasset, alternate.

Dr. Rufus E. Stetson, Chairman of the Diabetic Committee, presented material from the National Diabetic Association and urged the society to set up a campaign for the detection of diabetes, especially in Bath where there is a greater degree of industrialization. He was authorized to set up a program in connection with the laboratory facilities of the Bath Memorial Hospital with adequate publicity in the local newspaper, so that anyone in the surrounding communities might have their urine tested.

Dr. Winchenbach presented a report of a case of an acute abdomen with a perforated viscus which postoperatively was described as a bizarre enteritis. The pathologist described it as necrotizing peritonitis having a mononuclear reaction. Seven days postoperatively there was a complete dehiscence of the wound. There was no evidence of attempted healing. The wound was repaired in the operating room and about twenty-four hours following this repair patient became comatose and died. A specimen taken at the second operation showed some granulocytic infiltration. Postmortem examination showed the small intestines to be copper colored with dull gray patches varying in size. These were also noted on the large bowel and the parietal peritoneum. There was no free pus but there were patches of mucopurulent areas and mesenteric infarcts. The heart was soft and showed evidence of acute endocarditis with small vegetations on the edges of two of the valves. Dr. Irving I. Goodof of Waterville, guest speaker, reported the postmortem findings and gave a very

Continued on page 336



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SYMPTOMATIC CONTROL OF
NAUSEA AND VOMITING
ASSOCIATED WITH

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MANAGEMENT OF VERTIGO IN

Ménière's syndrome
radiation sickness
hypertension
fenestration procedures
labyrinthitis

MANAGEMENT OF
VESTIBULAR DYSFUNCTION
ASSOCIATED WITH

Streptomycin therapy

Tablets: 50 mg. each
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—and, of course, MOTION SICKNESS

Dramamine®

BRAND OF DIMENHYDRINATE

SEARLE

RESEARCH IN THE SERVICE
OF MEDICINE

County Society Notes—Continued from page 334

helpful discussion on how the pathology may have developed. In summary, a subacute pneumonitis of the right middle lobe apparently had existed for weeks and acute, probably staphylococcus, endocarditis had developed which resulted in these numerous septic emboli, one of which produced the perforation in the small intestine, two feet from the ileo-cecal valve. It was thought that the cortisone which had been given to treat the patient's shock may have had something to do with the healing of the wound and apparently good progress of the patient previous to the dehiscence of the wound. Dr. Goodof pointed out that a right middle lobe pneumonitis may often be overlooked, and may act as a focus of infection. Also, that whereas subacute endocarditis caused by a streptococcus infection will produce hemorrhagic areas, acute endocarditis will produce septic emboli. The fact that this patient was treated with penicillin and streptomycin without control fits the fact that many staphylococcus infections are now being encountered which are not susceptible to these antibiotics but require a broad spectrum antibiotic such as aureomycin.

We are indebted to Dr. Winchenbach for presenting such a very interesting case and to Dr. Goodof for his enlightening discussion.

M. W. WESTERMEYER, M. D.,
Secretary.

Penobscot

Dr. Martyn A. Vickers of Bangor, representing the Bangor Savings Bank, won low gross in the golf tournament at the Wentworth Golf Club held in connection with the 59th annual meeting of the Savings Banks Association of Maine, September 23, 1952.

York

Dr. Clarence F. Kendall of Biddeford, is spending the winter with his daughter at 2723-3rd Avenue, No., St. Petersburg, Florida.

New Members**Franklin**

Stanley B. Covert, M. D., Kingfield, Maine.

John W. Friend, M. D., 100 Main Street, Farmington, Maine. (By transfer from the Somerset County Medical Society.)

Change of Address**Cumberland**

Charles R. Glassmire, M. D.

From: 58 Deering Street, Portland, Maine.

To: 65 Drew Road, South Portland, Maine.

Earl S. Hall, M. D.

From: 696 Congress Street, Portland, Maine.

To: 748 Main Street, Westbrook, Maine.

George Loewenstein, M. D.

From: Great Chebeague Island, Maine.

To: Dark Harbor, Maine.

Kennebec

William B. McAvoy, M. D.

From: Waterville, Maine.

To: Veterans' Administration Hospital, Butler, Pa.

William N. Runyon, M. D.

From: 20½ Middle Street, Augusta, Maine.

To: 19 Davenport Street, Augusta, Maine.

Penobscot

William J. White, M. D.

From: 10 Water Street, Howland, Maine.

To: 1 Mitchell Road, South Portland, Maine.

Somerset

John W. Friend, M. D.

From: North Anson, Maine.

To: 100 Main Street, Farmington, Maine.

York

Ernest Eppinger, M. D.

From: West Buxton, Maine.

To: 52 Belmont Street, Portland, Maine.

Deceased

Harry Elkins, M. D., Assistant Superintendent at the Augusta State Hospital and a staff member for 31 years, died October 3, 1952. Dr. Elkins was a member of the Kennebec County Medical Society.

**HAVE YOU MADE YOUR RESERVATIONS
FOR THE
FALL CLINICAL SESSION?**

The Place — Elmwood Hotel, Waterville, Maine

The Dates — October 26 and 27, 1952

The Program — Pages 339, 340, 341, 342

*** Copy mailed to every member of the Association
on October**

COMING MEETINGS

Maine Medical Association Clinical Session, Elmwood Hotel, Waterville, Maine, October 26-27. Chairman Program Committee, Dr. Frederick T. Hill, Professional Building, Waterville.

American Medical Association Clinical Session, Denver, Colorado, December 2-5. Secretary, Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Ill.

American Academy of Dermatology and Syphilology, Palmer House, Chicago, Ill., December 6-11. Secretary, Dr. John E. Rauschkolb, P. O. Box 6565, Cleveland 1, Ohio.

American Academy of Tropical Medicine, Galveston, Texas, November 13-15. Secretary, Dr. Clay G. Huff, Navy Medical Research Institute, Bethesda 14, Md.

American Association of Medical Clinics, Cosmopolitan Hotel, Denver, Colorado, November 30-December 1. Executive Director, Dr. Edwin P. Jordan, Box 114, Charlottesville, Va.

American Psychoanalytic Association, New Yorker Hotel, New York City, December 4-7. Secretary, Dr. LeRoy M. A. Maeder, 1910 Rittenhouse Square, Philadelphia 3, Pa.

American Society of Anesthesiologists, Philadelphia, Pa., November 11-14. Secretary, Dr. J. Earl Remlinger, Jr., Suite 1101, 188 West Randolph St., Chicago 1, Ill.

American Society for the Study of Arteriosclerosis, Hotel Knickerbocker, Chicago, Ill., November 9-10. Secretary, Dr. O. J. Pollak, P. O. Box 228, Dover, Del.

American Society of Tropical Medicine and Hygiene, Galvez Hotel, Galveston, Texas, November 13-15. Secretary, Dr. Quentin M. Geiman, 25 Shattuck St., Boston 15, Mass.

Association of Military Surgeons of the United States, Hotel Statler, Washington, D. C., November 17-19. Secretary, Dr. R. R. Sayers, Armed Forces Institute of Pathology, Washington 25, D. C.

Congress of Neurological Surgeons, Palmer House, Chicago, Ill., November 6-7. Secretary, Dr. Bland W. Cannon, 1092 Madison Ave., Memphis, Tenn.

National Association for Mental Health, Henry Hudson Hotel, New York City, November 17-19. Medical Director, Dr. George S. Stevenson, 1790 Broadway, New York City.

Ring Door Bells — Get Out The Vote

NOVEMBER 4th

NEWS AND NOTES

September Meeting of Maine Medico-Legal Society

The Maine Medico-Legal Society met at the Augusta House, Augusta, September 24, 1952, for a dinner and afternoon session. Dr. Joseph E. Porter of Portland, President of the Society, presided.

The law regarding the exhumation of bodies was discussed by Boyd Bailey, Assistant Attorney General, and several County Attorneys and Medical Examiners.

Mr. R. P. Phipps was introduced by the Attorney General and gave a very interesting and instructive talk, illustrated with slides, on hand writing and fraudulent documents.

Several new County Attorneys and Medical Examiners were elected to membership.

Ralph Farris, Jr., W. H. McWethy, Joseph Holman, J. B. Perkins, and G. L. Pratt were appointed to confer with the Attorney General as to the advisability of introducing any new legislation.

GEORGE L. PRATT, M. D., *Secretary,*
Maine Medico-Legal Society.

Pediatric-Obstetrical Institute Held At Colby College, Waterville, on September 12, 1952

About fifty physicians and members of allied professions attended the Institute which was sponsored by the Division of Maternal and Child Health of the Department of Health

and Welfare and was endorsed by the Maine Medical Association. Dr. Clair S. Bauman, State Chairman of the Academy of Pediatrics, welcomed the group. Premature care and predisposing conditions were discussed in the morning and afternoon sessions.

The morning was devoted to obstetric situations predisposing to prematurity. Dr. Seymour L. Romney and Dr. William L. Caton, both from the Lying-In Hospital, Boston, were the speakers.

In the afternoon Dr. Murray E. Pendleton, The Children's Medical Center, Boston, spoke on the routine care of the premature infant and on eye problems, discussing in detail retrolental fibroplasia. Dr. William Pfeffer, Jr., from The Children's Medical Center in Boston, discussed the care of the sick premature infant especially conditions arising from the Rh factor and anoxia.

Plans for a State premature care program were outlined by Dr. Ella Langer, Director, Division of Maternal and Child Health.

Discussion periods followed each session.

Prize For Paper on Diabetes By Medical Students and Interns

The American Diabetes Association offers a \$250.00 prize to *medical students* and *interns* for a paper on any subject relating to diabetes. The paper can be a report of original studies, a biographical or historical note, a case report with suitable comment, or a review of the literature.

This incentive is particularly apropos in the field of diabetes, since Dr. Paul Langerhans made his studies of the pancreas, describing the islets that bear his name, while he was an undergraduate student in Berlin in 1869; and Dr. Charles H. Best, while a graduate student was co-discoverer of insulin in 1922.

Manuscripts must be submitted on or before April 1, 1953, to the Editorial Offices of DIABETES: The Journal of the American Diabetes Association, 11 West 42nd Street, New York 36, New York. The papers will be reviewed by the Editorial Board, which will take into consideration the value of the material and method of presentation in selecting the best paper.

The award of \$250.00 has been made possible through the generosity of the St. Louis Diabetes Association, an Affiliate of the American Diabetes Association.

The International Academy of Proctology 1952 Award Contest

The International Academy of Proctology takes pleasure in announcing its Annual Cash Prize and Certificate of Merit Award Contest for 1952-1953. The best unpublished contribution on Proctology or allied subjects will be awarded \$100.00 and a Certificate of Merit. Certificates will be awarded also to physicians whose entries are deemed of unusual merit.

This competition is open to all physicians in all countries,

whether or not affiliated with the International Academy of Proctology. The winning contributions will be selected by a board of impartial judges, and all decisions are final.

The formal award of the First Prize, and a presentation of other Certificates, will be made at the Annual Convention Dinner Dance of the International Academy of Proctology in May of 1953.

The International Academy of Proctology reserves the exclusive right to publish all contributions in its official publication, "The American Journal of Proctology and Gastroenterology."

All entries are limited to 5,000 words, must be typewritten in English, and submitted in five copies. All entries must be received no later than the first day of April, 1953. Entries should be addressed to the International Academy of Proctology, 43-55 Kissena Blvd., Flushing 55, New York.

PRACTICE FOR SALE

Introduction—office equipment, furniture and instruments. New office in excellent location. Fully equipped to move in, rent reasonable. Leaving soon for Pacific Coast.

H. E. SMALL, M. D.
31 Grove Street
Augusta, Maine

A Parcel For Poisonings—Continued from page 331

Apparatus

Although all of the equipment for the administration of the antidotes may be found in most hospital emergency rooms, it should be placed in the box where it will be readily accessible. This becomes increasingly important if the kit is to be transported to various parts of the hospital.

1. Alcohol sponges
2. Asepto syringe
3. Catheters
4. Can opener
5. Files for ampoules
6. Levin tube
7. Syringes and needles
8. Stomach tube
9. Tourniquet

Summary

A kit designed specifically for the treatment of acute poisonings is described. Experience has proven this to be a valuable addition to accident room service.

REFERENCES

1. Physicians' Desk Reference to Pharmaceutical Specialties and Biologicals, 603-604, Medical Economics, 1952.
2. McDonnell, J. F., Jr.: Table of Poison Antidotes. American Professional Pharmacist, 1936.
3. Arena, Jay M.: Accidental Poisoning in Children. Ciba Clinical.
4. Chen, K. K., and Rose, Charles L.: Nitrite and Thio-sulphate Therapy in Cyanide Poisoning. J. A. M. A., 149:113-119 (May 10), 1952.

VOTE NOVEMBER 4th !!!

PROGRAM
FALL CLINICAL SESSION

Waterville, Maine

Sunday and Monday

October 26 and 27, 1952

Headquarters and Registration

Elmwood Hotel

Evening Meetings — Elmwood Hotel

Clinics

Central Maine Sanatorium, Fairfield

Sisters' Hospital, Waterville

Thayer Hospital, Waterville

NOTICES**Registration**

Elmwood Hotel

Sunday, October 26, 1952

5.00-7.30 P. M.

Monday, October 27, 1952

8.30 A.M.-8.00 P. M.

Luncheon

Arrangements for cafeteria service for luncheon Monday, October 27, have been made at all three hospitals. Physicians wishing to avail themselves of this service are requested to notify the Secretary when registering.

Program — Woman's Auxiliary

The Program for the Woman's Auxiliary, which will meet at the Elmwood Hotel, Waterville, during the Fall Clinical Session of the Maine Medical Association, will be found on page 342.

Reservations

Reservations for hotel accommodations should be made direct to Elmwood Hotel, Waterville, Maine.

PROGRAM**Sunday, October 26, 1952**

6.00 P. M.

Dinner — Elmwood Hotel

Evening Session: Panel on Poliomyelitis (through courtesy of Maine Department of Health and Welfare)

Presiding: Dean Fisher, M. D., Director, State Department of Health

IMPLICATIONS OF CURRENT RESEARCH ON POLIOMYELITIS
Joseph Melnick, M. D., Associate Professor, Microbiology, Yale Medical School

CLINICAL ASPECTS OF CURRENT RESEARCH ON POLIOMYELITIS

Robert Ward, M. D., Professor, Pediatrics, New York University School of Medicine

Monday, October 27, 1952**Clinical Program****CENTRAL MAINE SANATORIUM**

10.00 A. M. TREATMENT OF TUBERCULOSIS — X-RAY PRESENTATION

William B. Grow, M. D.

11.00 A. M. SURGICAL TREATMENT OF TUBERCULOSIS —
Illustrated by X-rays
George E. Young, M. D.

1.30 P. M. STUDIES ON THE RESISTANCE OF TUBERCLE
BACILLI TO ANTIBIOTICS
Edward L. Foote, M. D., and Frank Ligenzowski, M. D.

2.30 P. M. PUBLIC HEALTH ASPECTS OF TUBERCULOSIS:
MAINE VERSUS NEW YORK
John Wisely, M. D.

3.30 P. M. WARD ROUNDS
Staff of Central Maine Sanatorium

SISTERS' HOSPITAL

9.30 A. M. N.P.H. INSULIN IN THE TREATMENT OF DIABETES
Blynn O. Goodrich, M. D.

EMERGENCY TREATMENT OF NASAL FRACTURES
James E. Poulin, M. D.

11.00 A. M. FRACTURES OF THE FEMUR — INTRAMEDULLARY FIXATION
Allan J. Stinchfield, M. D., and Richard L. Chasse, M. D.

PROBLEMS OF X-RAY THERAPY
Samuel Bluhm, M. D.

MEDICINE IN THE PHILIPPINES
D. T. Adriano, M. D.

2.00 P. M. STERILITY
Joseph C. Michaud, M. D.

INFECTED WOUNDS OF THE HANDS
Edward W. Paine, M. D.

VALUE OF SPINAL AND INTRAVENOUS ANESTHESIA
Edgar J. Smith, M. D.

3.30 P. M. SURGICAL USE OF STEEL WIRE
Richard L. Chasse, M. D.

HYSTERECTOMY — TOTAL VERSUS SUBTOTAL
Ovid F. Pomerleau, M. D.

POST-CHOLECYSTECTOMY SEQUALAE
L. Armand Guite, M. D.

Operating Clinics — (Consult schedule of operations posted at Registration Desk)

9.00 A. M. GENERAL SURGERY

2.00 P. M. ORTHOPEDICS
OTO-LARYNGOLOGY

Medical Motion Pictures — 9.00 A. M. to 4.00 P. M. in charge of James E. Poulin, M. D. (See schedule at Registration Desk)

THAYER HOSPITAL

9.30 A. M. TREATMENT OF POLLENOSIS

Samson Fisher, M. D.

COMPLICATIONS ENCOUNTERED IN GYNECOLOGY AND OBSTETRICS

Kenneth W. Sewall, M. D., Ralph L. Reynolds, M. D., Charles E. Towne, M. D., and Stanley C. Beckerman, M. D.

ARTHRITIS — PRESENTATION OF CASES FROM THE CLINIC

George J. Robertson, M. D., and Allan J. Stinchfield, M. D.

VESICO-SIGMOID FISTULA

Arthur H. McQuillan, M. D.

SINUSITIS

Loring W. Pratt, M. D.

HISTO-PATHOLOGICAL DEMONSTRATION — MEDICAL DISEASES

Irving I. Goodof, M. D.

11.00 A. M. DIFFERENTIAL DIAGNOSIS OF THE ACUTE ABDOMEN

John F. Reynolds, M. D.

INDUSTRIAL MEDICINE

Edwin W. Harlow, M. D., and Clarence E. Dore, M. D.

DIAGNOSIS OF CARDIAC DISEASE — ROUND TABLE DISCUSSION

John O. Piper, M. D., George J. Robertson, M. D., Frederic B. Champlin, M. D., Edmund N. Ervin, M. D., and Donald W. Drew, M. D.

REHABILITATION OF THE DEAFENED PATIENT

Frederick T. Hill, M. D., and Mrs. Elizabeth O. Koons, M. S.

HISTO-PATHOLOGICAL DEMONSTRATION — MALIGNANCY

Irving I. Goodof, M. D.

2.00 P. M. MANAGEMENT OF HEAD INJURIES

Albert S. Crawford, M. D.

GERIATRICS

George J. Robertson, M. D.

OBSTETRIC AND PEDIATRIC MANAGEMENT OF PREMATUREITY

Clair S. Bauman, M. D., Kenneth W. Sewall, M. D., and Edmund N. Ervin, M. D.

SUDECK'S ATROPHY (Traumatic Osteoporosis)

Joseph H. Giesen, M. D.

DETACHMENT OF THE RETINA

Howard F. Hill, M. D., Richard H. Dennis, M. D., and Charles E. G. Shannon, M. D.

HISTO-PATHOLOGICAL DEMONSTRATION — GYNECOLOGY

Irving I. Goodof, M. D.

3.30 P. M. INTERVERTEBRAL DISC SYNDROME

Albert S. Crawford, M. D.

CANCER OF THE BREAST

Edward H. Risley, M. D.

PROBLEMS OF X-RAY DIAGNOSIS IN PEDIATRICS

Edmund N. Ervin, M. D., and Moses F. Lubell, M. D.

METABOLIC DISEASES

Frederic B. Champlin, M. D.

GLAUCOMA

Howard F. Hill, M. D., Richard H. Dennis, M. D., and Charles E. G. Shannon, M. D.

HISTO-PATHOLOGICAL DEMONSTRATION — SELECTED CASES

Irving I. Goodof, M. D.

Operating Clinics — (Consult schedule of Operations posted at Registration Desk)

9.00 A. M. NEUROSURGERY

ORTHOPEDICS

OPHTHALMOLOGY

2.00 P. M. GENERAL SURGERY

GYNECOLOGY

OTO-LARYNGOLOGY

Medical Motion Picture Films — 9.00 A. M. to 4.00 P. M. in charge of Napoleon Bisson, M. D. (See schedule at Registration Desk)

7.00 P. M.

Dinner — Elmwood Hotel

Presiding: Eugene H. Drake, M. D., President, Maine Medical Association

Speaker: Ernest E. Huber, M. D., U. S. Public Health Service

WHAT IS EXPECTED OF OUR PROFESSION TODAY IN THE LIGHT OF NATIONAL EVENTS

Get On The Phone — Get Your Friends To Vote
NOVEMBER 4th

PROGRAM
WOMAN'S AUXILIARY
TO THE
MAINE MEDICAL ASSOCIATION

Sunday, October 26, 1952

Elmwood Hotel — Waterville, Maine

- 3.00 P. M. Board and Executive Council Meeting
- 6.00 P. M. Dinner — See Maine Medical Association Program

Following luncheon there will be a tour of Colby College Campus and Thayer Hospital under auspices of Thayer Hospital Auxiliary

- 7.00 P. M. Dinner — See Maine Medical Association Program

Monday, October 27, 1952

Elmwood Hotel — Waterville, Maine

- 10.00 A. M. Business Meeting for all members of the Auxiliary
- 12.30 P. M. Luncheon* — Honoring New England State Presidents and Maine Hospital Association Auxiliary guests

Mrs. Philip B. Chase, President, Woman's Auxiliary, Maine Medical Association

Mrs. Francis H. Sleeper, Chairman, Mrs. Richard H. Dennis and Mrs. Irving I. Goodof, Co-Chairmen, Committee on Arrangements, Woman's Auxiliary, Kennebec County Medical Society

Speaker — Mr. Edmund Wells, President, Health Council of Maine

* Make luncheon reservations with Mrs. Dennis, 55 Roosevelt Drive, Waterville, or Mrs. Goodof, North Street, Waterville.

HOSPITAL STAFF MEETINGS

Open to the Profession

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital	2nd Thursday
	Notre Dame Hospital	2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General	2nd Thursday
	St. Mary's General	2nd Monday
Portland	Maine Eye and Ear Infirmary	1st Tuesday
	Maine General	2nd Friday
	Mercy	4th Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Monday
Waterville	Sisters	2nd Tuesday
	Thayer	Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.



The Journal

of the

Maine Medical Association

Volume Forty-Three

Portland, Maine, November, 1952

No. 11

SUMMARY OF POLIOMYELITIS AT CENTRAL MAINE GENERAL HOSPITAL JULY TO NOVEMBER, 1952*

RUSSELL A. MORISSETTE, M. D., and DONALD H. HORSMAN, M. D., Lewiston, Maine

Poliomyelitis has been known as the disease of the late summer and early fall, the disease process having been quite definitely proven to be due to a known virus. However, there is much discussion as to the means of transmission and possible predisposing factors. With these questions in mind, a survey was started on all patients admitted to the Central Maine General Hospital with the diagnosis of polio to see if some common factor to these questions could be established, as well as trends in the disease in general and perhaps peculiar to this part of the country. At the end of the compilation of cases, other factors were prominent such as age incidence, sex ratio, the effects of different forms of therapy, possible methods of prognosis, and geographic distribution, all of which will be brought out in the discussion.

The following are all of these cases that were admitted over a three-month period from July 1 to September 30, 1952. These are all cases which were diagnosed and reported to the Public Health Department as definite polio as such, and not as doubtful cases. Some of these may be questioned as definite polio but are included out of fairness to the physicians who reported them and as a possible point of discussion later on.

In the following table, the heading *Physical Examination* is the physical examination taken on admission and *Clinical Course* represents the outstanding developments related to the disease per se while in the hospital. In the *Spinal Fluid* column most of the sugars were quantitative but some were qualitative and †††† represents a normal sugar as found by the 5 tube dilution method. In the *History* the symptoms are in order of occurrence from time first noted to time of admission.

* From the Department of Pediatrics, Central Maine General Hospital, Lewiston, Maine.

Case No. and Dates	Age and Sex	History	Physical	Clinical Course	Spinal Fluid
No. 1.					
7/9/52	41	3 days—headache, fever,	—neck supple	—pain in legs decreased	WBC
8/12/52	M	paralysis of both legs	—paralysis legs	—paralysis unimproved	L—90
		—no swim		—Hyde Home	P—40
		—city water			CHO—60
		—mill worker			T.P.—48
No. 2.					
8/2/52	25	4 days fatigue, fever, headache,	—cyanosis	—respirator	?
8/3/52	M	difficult breathing	—bulbar signs	—increase S.O.B.	
		—canoe trip	—breathing difficult	—coma, death	
		—no swim			
No. 3.					
8/3/52	8	2 days fatigue,	—mild stiff neck	—paralysis hips	WBC
8/27/52	F	pain in neck and	—systolic murmur	—Hyde Home	P—220
		stomach ache	—sits up stiffly		Sugar—++++
					T.P.—54
No. 4.					
8/4/52	9	3 days headache, stomach ache,	—stiff neck	—increase in weakness of	WBC
8/26/52	M	stiff neck, unable to stand	—weak in all extremities	rt. leg	P—8
				—contraction of rt. elbow	L—2
				—Hyde Home	Sugar—97
					T.P.—37
No. 5.					
8/11/52	34	2 weeks burning in back, headache,	—weak add. of thumb	—pain decrease	WBC O
8/20/52	F	fever, aches in arms and legs which	—weak add. of left leg	—weakness remains	Sugar—85
		persisted. 3 days pain in RUQ with		—Hyde Home	T.P.—115
		nausea and vomiting (? G.B.)			
		—no excessive exercise			
		—city water			
		—housewife			
No. 6.					
8/12/52	25	7 days headache, fever, better, pains	—stiff neck	—decrease in stiffness	WBC
8/19/52	M	in extremities, stiff neck and nasal	—no gag	—general muscular weakness	L—8
		twang	—voice nasal		Sugar—++++
		—drink any water			T.P.—74
		—heavy work in woods			
		—no swim			
No. 7.					
8/13/52	16	6 days dizzy and nausea; better,	—stiff neck	—decreased pain	WBC
8/27/52	M	dizzy and nausea; better, vomit,	—back pain	—swallowing improved	P—98
		fever, stiff neck	—twang	—mild weak jaw remained	L—70
		—doing hard work	—weak jaw		Sugar—++++
		—no swim	—poor swallowing		T.P.—38
		—town water			
No. 8.					
8/15/52	25	10 days difficult breathing, back	—stiff back	—decrease in pain	WBC
8/22/52	M	pain, better, headache, fever		—weak back	L—90
		—heavy building work			P—8
		—city water			Sugar—++++
		—no swim			T.P.—
No. 9.					
8/21/52	16	2 days—headache, stiff neck,	—stiff neck	—generalized paralysis of	WBC
8/25/52	M	chilly, fever, pain in legs, vomit	—pain in calves and	all muscles	L—10
		—cut bushes all summer	inguinal area	—respirator	Sugar—++++
		—? drinking water		—death	T.P.—104
		—no swim			
No. 10.					
8/24/52	7	6 days headaches; better, headaches,	—stiff neck	—weakness in both arms	WBC
9/14/52	M	vomit, stiff neck, fever	—? weak arms		L—250
			—decrease in arm		Sugar—69
			reflex		T.P.—47

<i>Case No. and Dates</i>	<i>Age and Sex</i>	<i>History</i>	<i>Physical</i>	<i>Clinical Course</i>	<i>Spinal Fluid</i>
No. 11.					
8/24/52	27	4 days sore throat, stiff neck,	—stiff neck and back	—arm improved	WBC
8/30/52	M	fever, stomach ache, weak rt. arm	—weak all rt. arm		P—10
		—excessive work in woods			L—55
		—spring water			Sugar—69
		—no swim			T.P.—46
No. 12.					
8/27/52	27	12 days difficulty in swallowing,	—decrease gag	—swallowing and leg improved	WBC
9/8/52	M	fever, chills, fever, headache,	—stiff neck and back	—arm fair improvement	L—40
		decreased use rt. arm and leg	—weak rt. arm and		Sugar—68
		—no excessive work	leg		T.P.—67
No. 13.					
8/28/52	36	3 weeks stiff neck and fever,	—weak arms and legs	—swallowing improved	WBC
9/6/52	M	1 day difficulty in swallowing	—difficulty in	—able to walk	P—10
		—hard building work on side	swallowing	—arms improved	L—23
		—common water supply			Sugar—80
		—no swim			T.P.—32
No. 14.					
8/27/52	3	4 days—fever, vomit, lethargic	—stiff neck	—nasal twang	WBC
9/14/52	F		—weak arms	—no improvement	P—15
					L—46
					Sugar—67
					T.P.—13
No. 15.					
8/9/52	5	6 days—fever, sore throat;	—inflamed throat	—weakness both thighs and	WBC
9/15/52	F	better, fever, stiff neck	—stiff neck and back	rt. arm	L—12
			—systolic murmur		Sugar—97
					T.P.—29
No. 16.					
9/6/52	2	6 weeks—fever, lethargic	—contraction of knee	—no progress	WBC
9/11/52	M	6 days—limp, no fever	—left foot drop		L—20
					Sugar—63
					T.P.—35
No. 17.					
9/2/52	5 mo.	2 days—fever, lethargic,	—asymmetry rt. face	—no improvement	WBC
9/5/52	F	crooked rt. face	—tongue deviated to		L—10
			rt.		T.P.—26
No. 18.					
9/4/52	2	4 days in hosp. with fever; 8	—20th hospital day	—no change	WBC
10/6/52	M	days with normal temp. then	paralysis both legs		P—150
		fever—17 day hosp. spinal			L—27
		fluid change			Sugar—75
					T.P.—38
No. 19.					
9/15/52	24	3 days tired, fever, chills, vomit,	—stiff neck	—paralysis rt. arm	WBC
9/27/52	M	difficulty in swallowing	—weak right arm and	—urine and bowel trouble	P—21
		—normal work	left leg	—Hyde Home	L—84
		—no swim			Sugar—66
		—city water			T.P.—64
No. 20.					
9/22/52	9	5 days—stomach ache, headache,	—ptosis left lid,	—legs improved	WBC
10/6/52	M	fever, vomit, stiff neck, difficulty	paralysis left face	—facial paralysis same	P—23
		in walking, facial paralysis	weak both legs		L—23
					Sugar—††††
					T.P.—61
No. 21.					
9/30/52	7	3 days pain in neck, fever, headache	—all negative		WBC
10/6/52	M	and vomit			P—2
					L—4
					Sugar—76
					T.P.—21

Discussion

Age: The composite picture of the age range was 5 mos., 2, 2, 3, 5, 7, 7, 8, 9, 9, 16, 16, 24, 25, 25, 25, 27, 27, 34, 36, 41 of the 21 cases, which makes the average age at 16½ years, and leaving over 50% of the series above 16 years of age. This would further substantiate the observation that the term "infantile paralysis" as a synonym for poliomyelitis is no longer proper. Also the observation that poliomyelitis is becoming more and more an adult disease is shown when we see the disease in people of 34, 36, and 41.

Predisposing Factors: Since it was difficult to evaluate predisposing factors in children, as were originally outlined in the introduction, this phase was limited to those patients who were admitted to the adult medical service which are those 16 years of age and over, and represent 11 cases.

The three questions that were asked routinely on these patients were: (1) source of water supply, having in mind the possibility of fecal contamination which has been considered one of the most prominent means of spread, (2) excessive work and physical exertion beyond that which the patient is used to, and (3) the amount of swimming which could include the features of the first two factors. Of the 11 adults, 7 had indulged in excessive work or exercise, 4 had been drinking water other than city or common community water supply. These 4 are in the group of 7 heavy workers. None had done any swimming. There seems to be no correlation with the severity or extent of paralysis or type of polio as literature has implied.

Sex Ratio: Seventeen of all the patients were male and four were female. This appears to be a striking ratio. However, this series is small enough so that this may well be in the realm of chance.

Therapy During the Acute Stage: The therapy in this series has been divided into two groups, one type for children and one type for the adult group. All the patients who were admitted to pediatric service were put on routine polio regime of foot boards, bed boards, and periodic hot packs to the affected parts and analgesics such as aspirin and codeine as needed. The results were very satisfactory in both relieving pain and preventing contractions. There were, however, incidences of considerable resistance and lack of coöperation on the part of some patients. The nursing problem as related to the hot packs was also a great consideration.

All the adult patients were treated with the same foot boards and bed boards and analgesics but no hot packs were used. In place of the hot packs, priscoline was used for the relief of muscle spasm. Here, too,

good results were obtained with considerable relief of the spasm and no contractions. The dosage used was priscoline 50 mg. Q.I.D. and increases of 12 mg. until the pain from spasm was relieved or until a flush appeared. On all patients mild physiotherapy of passive and then active motion was started after the acute phase had subsided. Those who had serious paralysis as a sequella were transferred to the Hyde Home in Bath for more vigorous physiotherapy.

Method of Prognosis: The total protein of the spinal fluid in the acute phase was used as a possible means of prognosis. The cases were classified and divided into two groups: (A) those with poor results or progression of the disease process, and (B) those with good results or improvement. Three cases were omitted from the series: one which was well over the acute phase—Case #5; one with no lumbar puncture done—Case #2; and one with incomplete spinal findings—Case #7. The average total protein of those classified as poor results was 62.6 mg.% and those of good results was 40.5 mg.%. In the 40.5 mg.% group, 3 of the 13 findings used were well above this average, and in the 62.6 mg.% group, 2 of the 5 findings were well below the average.

Geographic Locations: The locations of the cases are below—

Maine — Chisholm	1
Dixfield	1
Dryden	1
Farmington	1
Gardiner	1
Lewiston	5
Lisbon Falls	1
Litchfield	1
Livermore Falls	1
Mexico	1
Norway	1
Richmond	1
Rumford	1
Sabattus	1
South Paris	2
Out of State — Penn.	1

Fatalities: Two cases were fatal—#2 and #9. An autopsy was obtained on #9 and, grossly, the cord, brain stem and cortex showed signs of extensive infiltration and inflammatory response as was represented by the large unit of petechial hemorrhage throughout the tissues. These were the only cases in which the respirator was used.

Case Discussion: (1) Case #5. A 34-year-old woman who presented only vague symptoms of polio for two weeks prior to admission. She entered the hospital with symptoms which were suggestive of

gall bladder pathology. On physical examination the weakness in the adductors of the thumb and left leg was noted. The spinal fluid showed no cells, but had a high total protein of 115 mg.%. It was felt that this woman had had an acute mild attack of polio two weeks before and the spinal fluid picture is one of healing following the disease, since the total protein is the last abnormal finding to disappear and the pleocytosis being the first to disappear.

(2) Case #17. A five-month-old infant who had fever and lethargy with paralysis of right side of face is an unusual case from age incidence alone. It was felt that with the signs and symptoms plus the presence of 10 lymphocytes in the spinal fluid polio was the most likely cause of the paralysis. Other muscle weakness or paralysis could not be accurately determined due to difficulty in evaluating an infant of this age. #20 is another case where facial paralysis is the prominent feature.

(3) Case #21. Is a seven-year-old child who had history of pains in the neck muscles, fever, headache and vomiting. This is a picture that is often seen during the summer season. With a pleocytosis of over 5 cells, it was felt that this should be classified as an abortive case at least.

(4) Case #18. Is a 2-year-old child who presented an interesting diagnostic problem. The child was admitted with a mass on left side of neck following a fall down a flight of stairs. A positive blood culture of streptococcus viridans, the appearance of a systolic murmur, and a spiking fever suggested the

diagnosis of subacute bacterial endocarditis. Patient was started on penicillin and his temperature came down to normal on the fifth day and remained so until the fifteenth day of hospitalization, when the spiking fever started again. At this time, weakness of both legs was noticed. A spinal fluid was suggestive of polio. The temperature spiked for three days and returned to normal, at which time there was almost complete paralysis of both legs.

Conclusion:

1. Poliomyelitis occurs prevalently in the young adult age group.
2. Excessive work is a prominent feature as a predisposing factor to poliomyelitis.
3. The use of Priscoline deserves further evaluation in both pediatric and adults forms of polio.
4. More study is needed to evaluate the use of spinal fluid total protein as a prognosticating factor.

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DIAGNOSIS AND TREATMENT OF ACUTE PANCREATITIS*

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Even though acute pancreatitis is a relatively uncommon disease entity, its importance lies especially in the differential diagnosis of other upper abdominal catastrophes, such as perforated peptic ulcer and acute cholecystitis. Insofar as there has been a trend in the past decade not to treat this disease surgically but rather by a pancreas rest routine, it is important that the diagnosis be made early and that the disease be treated conservatively rather than surgically. From the combined medical and gastro-enterological services of the Graduate Hospital of the University of Pennsylvania from January 1, 1941 to December 1, 1950, there were 67,851 admissions, during which time 36 patients with acute pancreatitis were diag-

nosed. This incidence of .053 is comparable with other statistics of one per 600 hospital admissions.

Pathologically, acute pancreatitis presents itself in two forms, the latter form being a more fulminating stage of the first. The milder grade, which is designated acute pancreatic edema or interstitial pancreatitis, is clinically recognized by its milder symptoms, lower values of serum amylase, and delayed hypocalcemia. It is most often seen in association with an acute episode of biliary tract disease. The more severe form is designated acute hemorrhagic pancreatitis, or acute pancreatic necrosis. This may be an extension of the mild form which follows obstruction of the outflow of the pancreatic juice, the presence of an antecedent pancreatic inflammation, or the presence of a disturbance of the blood supply of the pancreas. The work of Doubilet and Mulholland has

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shown that when bile is injected into the pancreatic ducts, pancreatic necrosis follows. Their "common channel theory" is supported by the demonstration of a physiological common channel in approximately 90 per cent of the 150 patients studied. Therefore, spasm of the sphincter of Oddi, impaction of the calculus in the ampulla, or vigorous contraction of the gall bladder, may be sufficient to cause a reflux of bile into the pancreatic duct and cause pancreatitis. The bile salts produce necrosis of the pancreatic cells with release of pancreatic enzymes, the end product of which i.e. trypsin, breaks down the tissue protein including the cell membrane of the fat cell. Pancreatic lipase permits hydrolysis of the fat cell, the resulting fatty acids combine with calcium ions to form the white plaques of fat necrosis seen at laparotomy. These are insoluble calcium soaps. Obstruction, then, of the pancreatic duct accounts for the elevated serum amylase and serum lipase, and the resultant fat necrosis accounts for the low blood calcium. The two most important etiological factors are the associated biliary tract disease and excessive imbibition of alcoholic beverages, although trauma to the abdomen and posterior perforation of a peptic ulcer may be responsible.

The clinical features of acute pancreatitis are the sudden onset of a severe steady upper abdominal pain, usually localized to the epigastrium with radiation to the left flank and to the back in the area of the first or second lumbar vertebra. The patient presents a shock-like state with low blood pressure and a mottling of the skin over dependent areas. There is a tendency for abdominal distension with absence of peristaltic sounds which confuses this disease with intestinal obstruction. The muscle spasm and even board-like rigidity will cause one to be suspicious of perforated ulcer or basal pneumonitis. The other conditions, then, which will be confused with the diagnosis of acute pancreatitis are acute coronary occlusion, intestinal obstruction, perforated viscus or peptic ulcer, acute alcoholic gastritis, acute cholecystitis, acute appendicitis, acute diverticulitis, and basal pneumonitis.

The diagnosis of acute pancreatitis then will be determined by a serum amylase determination in suspected cases. It may be repeated that it is important to make an early diagnosis in order to institute a medical regime rather than surgical intervention. A serum amylase determination can be done in approximately one hour, and will be high early in the course of the disease. Normal levels range from 40-140 mgs. per cent of glucose. Levels of over 500 mgs. per cent are usually consistent with fulminating disease. Serum lipase concentrations require a longer time to do in that the blood must be incubated for 24 hours. The lipase value, then, is not a good test for early diagnosis. It becomes elevated later in the disease

and remains elevated longer than the serum amylase. It must be remembered that there are other conditions which produce an elevated serum amylase:

- a) pancreatic involvement from a perforated ulcer
- b) acute inflammation of the salivary glands, especially acute parotitis
- c) kidney retention by failure of amylase excretion
- d) intestinal obstruction
- e) peritonitis
- f) free perforation of a gastric-duodenal lesion with a flow of pancreatic enzyme into the peritoneal cavity and subsequent absorption

The essential laboratory procedures should be serum amylase, serum lipase, serum calcium, urinary diastase, E.K.G., and flat plate of the abdomen, along with the blood cytology and blood sugar.

The treatment of acute pancreatitis is described as pancreatic rest. Many surgical procedures have been attempted in the past, such as incision of the capsule, cholecystotomy or common duct drainage; however, the mortality will be lowest in those cases treated by intensive medical therapy and reserving surgical procedures for such complications as peripancreatic abscess, pseudocysts, and recurrent pancreatitis. The medical regime should include treatment of shock; treatment of dehydration and electrolyte imbalances; removal of the causative factor if possible, i.e. gastro-duodenitis to relieve pain and by so doing treat the shock; and finally, suppress the external pancreatic function. It has been found that the use of Demerol as an analgesic is preferable, rather than morphine, because of its atropine-like action. A Levine tube should be placed in the stomach and antibiotics should be used in large doses, preferably Penicillin. Paravertebral block has been successful in relieving pain. The ninth and tenth thoracic ganglia are blocked on the left side, using 5 c.c. of 2 per cent Procaine at each site. I personally have had no experience treating acute pancreatitis by a block; however, I have found it very effective in at least two cases of recurrent pancreatitis. Vagal stimulation may be reduced by such drugs as Atropine, Tetraethylammonium or Banthine, but their value is questionable. Surgery, then, will be utilized only for the complications of pancreatitis.

In summary, the etiological factors of pancreatitis and its pathological physiology are discussed. The diagnosis will be made by serum amylase determinations, and the importance of making an early diagnosis lies in the fact that the disease should not be treated surgically, but medically. A suggested medical regime is outlined.

SUMMARY OF DISCUSSION

It was mentioned in the discussion that an additional disease entity to be considered in the differential diagnosis is mesenteric thrombosis. This condition resembles pancreatitis, i.e., a silent abdomen and a picture of profound shock. Also, the ileus is seen in both conditions by X-ray. Next, it was brought out that the mental changes seen in acute pancreatitis are probably the mental changes of alcoholism. The use of morphine was also discussed in the treatment of this disease, and because morphine produces spasm of the sphincter of Oddi, it should be contra-indicated in acute pancreatitis. Dr. Robert W. Belknap

raised the question, "How far are you going to go without exploring?" The answer lies in one's reliance upon the serum amylase test. An elevation of over 500 mgs.% is quite indicative of a fulminating pancreatitis.

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DIVERTICULITIS OF THE COLON*

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Usually, when we operate on a patient for acute diverticulitis in an acute emergency, we have made a mistake in diagnosis, and the few words that I have to say on the subject are more or less to deal with the problem of "usually by mistake" rather than talking about the late complications of diverticulitis which are treated surgically.

I have looked up some of the literature in order to find out just what the incidence of acute perforations of diverticulitis of the colon is. It is pretty low. The evidence of diverticulosis is said to be 8½ per cent in a review of 47,000 barium enemas done at the Mayo Clinic, and it has been estimated by a number of observers that the incidence of diverticulosis in individuals over forty is in the vicinity of 5 per cent. It has also been estimated that of these individuals who have diverticulosis over the age of forty, 10 to 20 per cent of them will eventually have diverticulitis in some form or another, and about a quarter of these will require surgery at some time. In a review of the surgical literature on diverticulitis, collected by Dr. Smithwick in 1940, and this is a compilation of a number of collections of cases from various clinics in this country, he found an incidence of 13.4 per cent of acute perforations in diverticulitis undergoing surgery. Bringing these statistics all together, we find that 2.4 individuals in 10,000 are liable to have an acute perforation from acute diverticulitis. Actually, it is with that group, and possibly with the group with abscess formation, just about equal in number, with which we are dealing in diverticulitis as an acute emergency.

From a statistical point of view, also, diverticulitis

occurs primarily in the age group of forty to seventy. Of 369 cases, 322 were of those ages. As to location, 79 per cent of it occurs in the sigmoid, with a decreasing incidence around to the right colon, which has only an incidence of 2 per cent of all diverticulitis.

Although there are many cases of acute diverticulitis of the caecum in the medical literature, yet because of the various locations of the diverticulitis, the symptoms may be confused with the symptoms of the other acute abdominal emergencies. In addition to appendicitis, gall bladder disease, and pancreatitis, we ought to include pelvic inflammatory disease, and perforated carcinoma of the sigmoid and descending colon in any differential diagnosis.

Even after having been studied by X-ray and very frequently after the lesion has been examined at the operating table, a definite differential diagnosis cannot be made in 25 per cent of the lesions examined.

Most of the acute diverticulitis has been treated surgically under the mistaken diagnosis of some other acute abdominal emergency, and the problem of treating these when we find them at laparotomy is one of individualization of the type of treatment, depending upon the type of disease found.

Since the arrival of the antibiotics, the mortality of surgical treatment of diverticulitis has dropped tremendously, from 22 per cent to 4 or 5 per cent, and I believe that we are able to take a more aggressive attitude from an overall surgical point of view, and we are able to give more hope of a permanent cure than we could fifteen years ago.

Let us say that we open up an individual who has an area of acute diverticulitis, and the diverticulitis is in the sigmoid, which is the common location; what

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should we do for it then? The simplest thing to do is to do nothing and sew the patient up, if there is no free, acute perforation. If there is merely an area of acute localized inflammation, you can use the Miller-Abbot Tube, provided there is no obstruction from the lesion. I think that a fairly large number of patients have this relatively mild type of diverticulitis, where we can get away with that form of treatment, and any further therapy could be postponed until the acute process subsides.

If there is any area of obstruction, I think that a decompression of the bowel is warranted, and is definitely advisable. In other words, if we find acute diverticulitis in the sigmoid, with the obstruction of it, a transverse colostomy at the time of operation certainly will give the area of acute inflammation a good chance to quiet down and will give the patient the safest post-operative course possible. I think we have to admit that if we do transverse colostomy, we are almost certainly committing ourselves to going on with a resection of some form or another in the future, because somewhere around 60 per cent of these patients will have a flare-up, if the colostomy is closed without resection.

If we run into a little more advanced stage of the disease, one with an acute perforation of, let us say, the sigmoid, again, because three-quarters of the patients have the disease in this area, we are faced with a number of possibilities. First, we may bring the perforated area out and do an obstructive type of resection, such as advised in gun-shot wounds of the large bowel. Very frequently, the area of diverticulitis may be so low that it is not mechanically practical to bring it out to the abdominal wall. Under those circumstances, we have to do a local drainage and then do a colostomy proximal to the area of diverticulitis, as a means of stopping further leakage, and allowing inflammation to quiet down.

Occasionally, we find it necessary or advisable in an area of very small amount of diverticulosis, or with a single, acute diverticulum, to do a resection, or an excision of the diverticulum itself. That is true in diverticulitis of the caecum, where it may become inflamed, like appendicitis. It is possible to do a local

excision, just as we would for an operation for acute appendicitis. Likewise, in lower portions of the colon, if the inflammatory process is not too acute, we may find it occasionally advisable, as an acute procedure, to do a resection with an end-to-end anastomosis.

I think we are at a disadvantage treating an acute diverticulitis in this way because we usually have no opportunity to prepare the bowel properly. We haven't had a period of four to five days with the antibiotics to cut down on the bacterial content of the intestinal tract, and we probably are assuming a certain amount of risk in doing that. But, occasionally, it is necessary. I think perhaps the most usual time that this may be necessary is in acute perforations, or acute diverticulitis of the caecum, where it is technically difficult to do decompression in the form of a colostomy.

I have had experiences with two perforations of diverticulitis of the caecum; one where we wound up doing a resection of the caecum as an emergency procedure; and in the other, an ileo-ascending colostomy, after excision of the caecum, to remove a localized area of diverticulitis in the caecum. Both patients did very well post-operatively, and the whole trouble was taken care of in one operation, rather than the multiple-stage procedure.

All told, I believe in the treatment of acute diverticulitis, if we stumble on it at operation, a proximal decompression or putting the intestinal tract at rest by the Miller Tube, and the use of antibiotics, will tide the patient over until the acute stage has passed and the patient gets into the chronic or quiescent stage in which the definitive surgery can be carried out.

SUMMARY OF DISCUSSION

Bleeding from diverticulitis represents a real problem. 15.7 per cent of the patients seen at the Mayo Clinic with diverticulitis showed evidence of blood in the stool. In a patient with severe bleeding and no other obvious cause a localized area of diverticulitis should be resected, preferably at a time of election. In the patient with diffuse areas of involvement a more conservative approach must be employed.

Clinical Session Geared For GP

The sixth annual Clinical Session of the American Medical Association—meeting December 2-5 in Denver—will feature practical demonstrations on various phases of medicine of special educational value to the general practitioner. More than 60 scientific exhibits will provide the GP with a postgraduate course in such subjects as office anesthesia, cardiology, dermatology, endocrinology, gynecology, laboratory pro-

cedures, otolaryngology, pediatrics and proctology. Emphasis will be on diagnosis and treatment.

In addition to scientific papers presented by leading physicians from all over the United States, highlights of the meeting will include a large technical exhibit, surgical and clinical demonstrations on color television and motion pictures. All technical and scientific exhibits and scientific sessions will be held at Denver's recently-enlarged Municipal Auditorium.

ETHER ANESTHESIA IN THE COMMUNITY HOSPITAL

WARREN G. STROUT, M. D., CLEMENT S. DWYER, M. D., and PHILIP B. THOMAS, M. D.*

The literature of the past few years records the rapid progress being made in the field of anesthesiology. New techniques and new drugs have contributed much to the advancement of modern surgery and to the comfort and safety of the patient, yet, in this literature little attention is accorded simple ether techniques which must be used in the smaller hospitals due to limitations in apparatus and personnel. Open and semi-open methods have proved the safest under usual circumstances in the hands of those charged with the responsibility for anesthesia in the community hospital. It must be stated, however, that careful studies of open and semi-open methods have demonstrated certain unphysiological characteristics which are inherent in these methods as ordinarily employed.¹ The elimination of some of these defects is possible and desirable. Open drop ether is unpleasant, especially to adults, and induction to ether by means of less irritating agents such as nitrous oxide-oxygen or Vinethene enhances the comfort of the patient and the smoothness with which the anesthetic is administered. It is the purpose of this paper to offer suggestions for the improvement of ether techniques in small institutions without the purchase of costly equipment.

GENERAL CONSIDERATIONS

As manufactured and stored today, ether contains practically no impurities. However, upon exposure to air, impurities in ether may form within twenty-four hours. Impurities are chiefly important in that they serve to lower the ignition point of the mixture. Ether is inflammable when mixed with air and explosive when mixed with oxygen in a closed system. The danger of explosion is particularly unlikely with open drop techniques since the great density of ether vapor—two and one-half times that of air—makes it fall to the floor and removes it rapidly from common sources of ignition. Nevertheless, all precautions to prevent fires and explosions must be employed.²

The clinical advantages of ether are well known. The agent possesses a wide margin of safety and, judged upon clinical results, would appear to upset the patient less than biochemical investigation would suggest. With proper premedication it will produce excellent relaxation without undue respiratory depression. In the absence of hypoxia and extrinsic causes for carbon dioxide excess, respiratory depression, if

it occurs, is not accompanied by serious cardiac derangement. Respiratory arrest from temporary overdosage may be relieved by removal of the mask, and giving oxygen and artificial respiration if necessary.

Ether is irritating to the broncho-pulmonary epithelium and although it may be used in the presence of acute infections of the respiratory tract, elective procedures should be deferred. The presence of pulmonary tuberculosis probably does not contraindicate the use of the agent.³ During ether anesthesia the blood sugar rises and the carbon dioxide combining-power falls. Although ether is frequently used in the presence of diabetes and in other conditions causing acidosis, this hazard should be seriously considered. Similarly, patients with severely impaired liver and kidney function may not tolerate ether anesthesia well. Oxygen lack during ether administration will probably do more harm to these organs than the agent itself.

PRE-OPERATIVE PREPARATION OF THE PATIENT

All patients scheduled for anesthesia should be examined within twenty-four hours of the proposed operation. A brief history is taken, a physical examination with particular emphasis on the circulatory and respiratory systems, liver and kidneys is performed. Blood and urine specimens are routinely examined and appropriate orders are written to assure that the stomach, bladder and rectum are empty. If the patient is a suitable candidate for ether anesthesia, the pre-operative medication is selected. This must be individualized with particular regard to age, physique, previous medication and the psychic state of the patient. It is customary to administer a barbiturate such as Seconal or Nembutal at bedtime. Chloral hydrate is often substituted in patients with idiosyncrasies to these drugs as well as in the older age group. In the elderly, sedation the night before operation may be omitted. For the nervous patient, the barbiturate may be repeated in the morning, one and one-half hours prior to operation. A barbiturate may cause respiratory depression and tend to enhance cough during induction. Morphine sulfate and atropine sulfate or scopolamine hydrobromide are given one hour before operation. Intravenous administration with reduced dosage may be utilized if less than one-half hour is to elapse before operation. In children, Young's rule of $\frac{\text{age}}{\text{age} + 12} \times \text{adult dose}$ is a satisfactory method of determining the amount of morphine or demerol to be used. A suitable chart of children's doses is given in Table I. Atropine is

* From the Department of Anesthesiology, Eastern Maine General Hospital, Bangor, Maine.

TABLE I

PRE-ANESTHETIC SUBCUTANEOUS DOSAGE OF MORPHINE SULFATE AND ATROPINE SULFATE IN CHILDREN

Age (years)	Morphine	Atropine
0- 1	Omit	Omit
1- 3	Omit	Gr. 1/400
3- 5	Omit	Gr. 1/300
5-10	Gr. 1/24-1/12	Gr. 1/200
10-15	Gr. 1/8 -1/6	Gr. 1/200-1/150

preferred in the older age group because of the unpleasant side-actions of scopolamine encountered in these patients.

Intramuscular demerol is substituted for morphine in those patients giving a history of bronchial asthma. Aminophylline may be administered by rectum with the pre-operative medication. If suppositories of the latter are unavailable, the seven and one-half grain intravenous ampoule may be added to an ounce of water and the mixture given by rectal catheter. Increased capillary bleeding during operation may occur after the use of aminophylline.

OPEN DROP METHODS

Four commonly used face masks are displayed in Figure I. They are the Yankauer, the Gwathmey-Yankauer, the baby Yankauer and the so-called Boston City Hospital mask. The Yankauer mask consists of a dome of fine mesh wire with a smooth metal rim. It is prepared for use by placing eight to twelve layers of gauze over the screen. These are secured by a circular spring. The number of layers of gauze may be reduced if vaporization from the outside surface of the mask is excessive. The Gwathmey-Yankauer mask is of similar construction and a connection is provided for administration of oxygen or nitrous oxide-oxygen. The baby Yankauer mask is circular and much smaller in size. Six to eight layers of gauze are held in place by a spring wire within the mask. The Boston City Hospital mask is much larger than the other adult masks and is constructed of coarse mesh wire. A rubber dam two inches wide is stretched around the rim to provide a close fit to the patient's face.

The approximate volume of the masks has been measured and is shown in cubic centimeters in Figure I. This amount of air enclosed by the mask represents maximal potential dead space and is of considerable importance. Considering the factor of mask dead space alone, the large volume of the B. C. H. mask discourages its routine use. The volume of the baby Yankauer is indeed considerable in relation to the small tidal volume of the infant and small child.

Faulconer¹ has pointed out that during the administration of open drop ether the partial pressure of oxygen inhaled becomes less than that of atmospheric air and that lowered arterial oxygen saturation subsequently occurs. The cause of this decrease in partial pressure of oxygen is twofold; first, the relatively large volume of ether in the inspired mixture and secondly, the dead space between the mask and the face which permits inhalation of previously respired air with its high carbon dioxide content.

The recognition of carbon dioxide excess during anesthesia depends largely upon the experience of the observer. In its most severe form the patient may experience respiratory arrest, a marked fall in blood pressure or generalized convulsions. A flushed pink color of the skin due to peripheral vasodilatation will often permit early recognition of the excess. Increased bleeding from the operative wound may be noted and laryngospasm may occur. In any well-oxygenated patient whose depth of respiration is increased, whose blood pressure rises or who shows any muscular twitching, carbon dioxide excess should be considered. Table II is an outline of symptoms and signs of carbon dioxide excess in order of increasing severity.

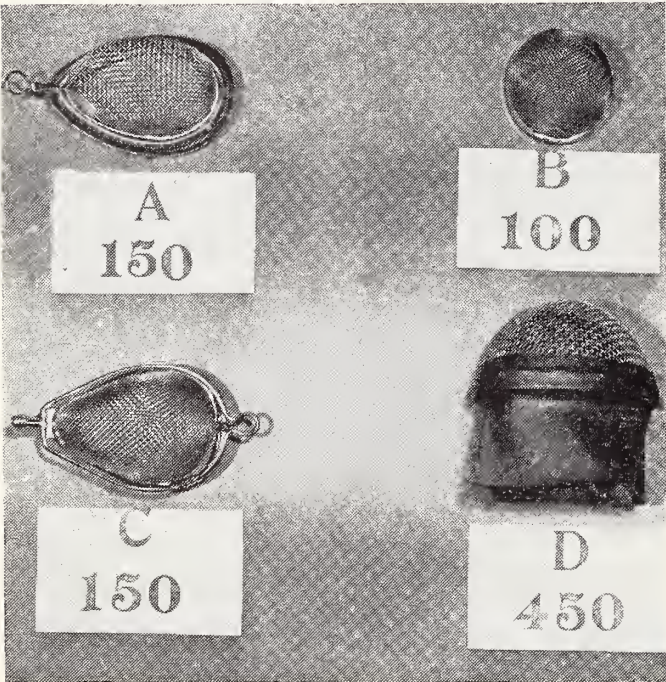


Figure I—Four commonly used face masks:
A. Yankauer.
B. Baby Yankauer.
C. Gwathmey Yankauer.
D. Boston City Hospital mask.

TABLE II

AN OUTLINE OF SYMPTOMS AND SIGNS OF CARBON DIOXIDE EXCESS IN ORDER OF INCREASING SEVERITY

	Mild	Moderate	Severe
Respiration—Rate	Slight or no increase	Depressed	Arrested
Respiration—Depth	Markedly increased	Depressed	Arrested
Blood Pressure	Increased	Increased markedly	Fall
Musculature	Twitching	Spasms of muscle groups	Convulsions
Color	Pink due to peripheral dilation		
Pupils	Variable	Variable, often dilated	Dilated

Supplemental oxygen should be given during open drop ether with all of the masks described to supply oxygen and wash out carbon dioxide. This is provided at a rate of five hundred to fifteen hundred cubic centimeters per minute, depending on the type of mask, by a catheter lying along side the nose, or by the connection provided on the Gwathmey-Yankauer mask. In the good risk patient it is customary to start the flow of oxygen after light surgical anesthesia has been established for temporarily increased carbon dioxide with resultant stimulation of respiration often is an aid during the induction of open drop ether. In the poor risk patient, supplemental oxygen should be used from the start of the anesthesia.

INDUCTION METHODS

The value of rapidly-acting Vinethene as an induction agent to open drop ether is well known and in pediatric anesthetic practice its use is particularly satisfying. If ether is gradually added along with Vinethene as soon as the patient has become analgesic, a rapid and smooth induction may be performed.

Nitrous oxide-oxygen induction to ether is widely practiced but it is generally believed that this sequence requires a considerable amount of apparatus for its use. Figure II illustrates a satisfactory method for the administration of these agents which is inexpensive, of simple construction and requires no special training for its safe use. An improvised semi-open mask is prepared as illustrated in Figure III. It is specifically designed for gas-oxygen induction and must not be used for ether or Vinethene alone without gas flow. A strip of opened magazine or newspaper six inches wide is laid on a towel measuring approximately thirty-six by eighteen inches so that the paper edge contacts the long free edge of the towel. The towel and magazine are now grasped at one end and a fold about seven inches wide is made with the paper innermost as shown. Folding is then

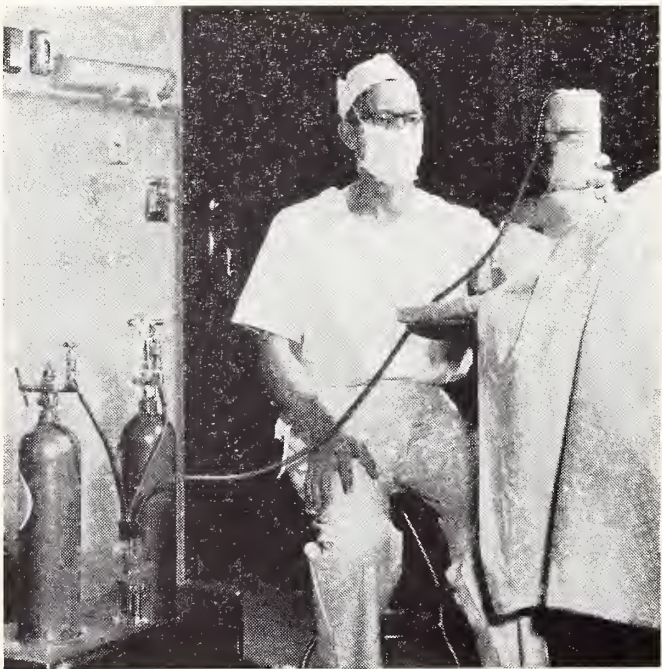


Figure II—An improvised semi-open method for nitrous oxide-oxygen-ether sequence.

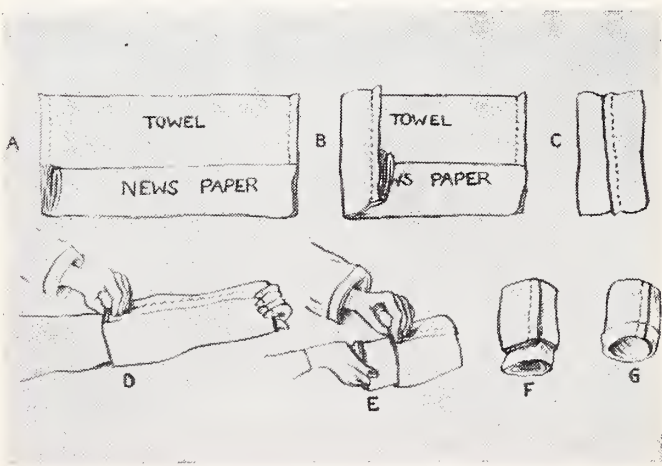


Figure III—Preparation of the semi-open mask.

continued until a tube is formed. The hand is thrust through the tube grasping the free edge of the towel and pulling it through to form a lining for the tube. The surplus is turned over the top of the tube to form a collar and the one loose corner is held down with a single safety pin. A Miller ether ring is filled with "fluffed" loose gauze which is held in place by wrapping a single layer of gauze about the ring. The gauze-filled ring is then inserted into the mask until flush with the top. The mask should be available in three sizes for general use.

Gases are led into the mask by means of a copper tube which is prepared from an eight-inch length of three-eighths inch tubing properly bent in the center. The tube is hung over the top of the mask with the inner limb fixed between the Miller ether ring and the side of the mask. The outer limb is connected to a source of nitrous oxide-oxygen which may be a Gwathmey apparatus, a direct delivery apparatus or, with proper adaptors, the circle absorption apparatus. If no suitable method of measuring and controlling the flow of these gases is available, a device illustrated in Figure IV may be used.

This apparatus is of simple construction. Small (size D or E) tanks of nitrous-oxide and oxygen fitted with needle valves are placed in a suitably made wooden box. A glass jar fitted with a three-hole

rubber stopper is located between the tanks. Two tubes are prepared from eight-inch lengths of one-quarter inch copper tubing. At one end of each tube five holes three-eighths of an inch apart and three-sixteenths inches in diameter are drilled as illustrated in Figure IV. The tubes are inserted through the rubber stopper and a three-inch outflow tube placed in the third hole. The connections are sealed with shellac. Distilled water is poured into the jar until the level is about a half-inch above the uppermost holes in the tubes. By observing the hole through which the gas is bubbling an approximate percentage ratio of gases can be established. When regulated so that nitrous oxide is bubbling through four holes and the oxygen through one hole, a mixture of approximately 80% — 20% nitrous oxide-oxygen may be expected.

With the improvised semi-open mask in position, induction is begun with a 4:1 ratio of nitrous-oxide to oxygen. With this method cyanosis is the most important guide to oxygenation and its appearance demands increased oxygen regardless of apparent flow being used. Ether is dropped on the open end of the mask as soon as analgesia develops. Often the patient is not asleep when ether is begun and attempts should not be made to force sleep by increasing the concentration of nitrous oxide. The sense of smell is lost early in induction and ether may be started quickly. The flow of the gas-oxygen mixture is gradually reduced as surgical anesthesia becomes established. Ether is continued with oxygen flowing at approximately five hundred to fifteen hundred cubic centimeters per minute depending upon the size of the mask.

The semi-open technique using the nitrous-oxide-oxygen-ether sequence is easily learned by anyone accustomed to the use of open drop ether. The cost of equipment is certainly within the budget limitations of the small hospital.

Induction by means of pentothal directly to open drop ether is usually extremely difficult and adds to the hazard of anesthesia unless one is expert in handling the complications of pentothal anesthesia. This barbiturate enhances the pharyngeal and laryngeal reflexes and as a result, ether vapor is poorly tolerated in the respiratory passages. Cough and laryngospasms of a rather persistent nature are all too often encountered during this particular method of induction. Pentothal is quite commonly used, however, to induce hypnosis prior to gas-oxygen induction.

SUMMARY

Ether anesthesia in the community hospital is frequently limited by available apparatus and personnel. Inexpensive methods for improvement of techniques are suggested.



Figure IV—Improved bubble-type flowmeter.

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INDUSTRY AND TUBERCULOSIS

FRANK W. BARDEN, M. D., Biddeford, Maine*

In response to an invitation from the New England Tuberculosis Conference program committee, the author, Dr. Barden, compiled the following paper for presentation at the Conference held in Portland, September 24-26, 1952. Dr. Barden is employed by the Saco-Lowell Manufacturing Company of Biddeford, as a full time director for their health program.

When your program chairman asked me to participate on this panel, acting as the employer, I really had never sat down and fully analyzed the tuberculosis program in industry, because we just recognize it as a "matter of fact." However, after going over the entire picture I find it is considerably more complex than I had first realized.

The most recent statistical report compiled by Mary Dempsey, statistician for the National Tuberculosis Association, revealed that three to four cases of active tuberculosis exist per one thousand adult population. The monthly publication, "Labor Review," published by the Bureau of Labor Statistics, shows that for the first five months of 1952 there were 53,784,600 people employed in industry throughout the United States. Using Mary Dempsey's estimates there should be around 200,000 (actual 161,352 to 215,136) active cases of tuberculosis in this industrial population, many waiting to be discovered.

On the basis of the Dempsey findings, approximately seven inactive cases of tuberculosis are estimated to exist per 1000 adults. In other words, in industry there are 376,488 employed inactive cases of tuberculosis. Thus, when the National Tuberculosis Association estimates that 1,200,000 Americans need medical supervision for active or inactive tuberculosis, it is evident that about 550,000 (actual 537,830 to 591,840) of these cases are in industry.

The figures that the National Tuberculosis Association has compiled are those referring only to pulmonary tuberculosis. When one considers such tuberculous diseases as tuberculous peritonitis, tuberculosis

of the kidney, tuberculous meningitis and all through the whole gamut of tuberculous diseases, the tuberculosis problem in industry becomes greatly magnified.

In the past it was thought that tuberculosis was a disease of young adulthood, but now it is becoming more and more prevalent in adults over forty years of age. Many cases are occurring in the fifty and sixty-year age group.

Think what that means to industry! Some of those stricken have been with their companies many years. They have acquired a great deal of knowledge and "know-how" and are a valuable asset to their employer. Then, after twenty-five or thirty years of employment, they are suddenly stricken with active tuberculosis.

From the Dempsey report: "The average cost of one case of tuberculosis can be estimated at \$14,000 or \$15,000. This is a composite figure obtained as a result of several studies, most of which were made by the New York State Department of Health. This amount includes cost of medical care, compensation, loss of wages, pensions, and relief payments to the patient's family while he is incapacitated. The estimated figure does not include the loss of the patient's productive capacity, nor the potential future earning power of those who succumb to this disease."

When we are computing the cost of accidents we know that for every tangible dollar spent, there are three intangible dollars associated with the cost of an accident. I see no reason why we cannot apply the same principles when estimating the total cost of tuberculosis in industry. After all, tuberculosis can be considered an accident in our health. If we do each case of tuberculosis will cost in the vicinity of \$55,000.00.

Let us glance, just for a minute, at the problem in New England, the United States Bureau of Labor statistics says that during the month of May, 1952, there were 1,489,300 people employed in manufacturing in New England. Using the Dempsey report findings as a guide we can estimate that there are

* Chairman, Maine Medical Association Committee on Industrial Health.

potentially 4,811 active cases of tuberculosis in New England industry, many of them undiscovered, perhaps, and 10,414 inactive cases which need medical supervision. Surely figures of this kind cannot help but impress upon us the problems of tuberculosis in our local industries.

The discovery that an employee has active tuberculosis imposes the first of these problems on management. A new man must be trained to take the stricken employee's place. This is expensive. Depending upon the authority that you use, it is estimated that it costs from \$75 to \$300 to train a new person on the job, to a point where he can hold his own on a production line. If the replacement is a new hire, then the cost of hiring and indoctrination will add even more to this expense.

Meanwhile, loss of production (the factory manager's headache), can also pose a problem which is expensive too.

It is true that after proper treatment many tuberculosis patients will be restored to health. They will be able to return to work, if their employer will rehire them. Here, then, is another problem for industry, but in this age of enlightened management it can be solved.

What are some of the measures that can be taken to help solve these problems? First, we in industry, large and small, must recognize that the condition does exist. Second, we must take measures to ferret out these active and inactive cases so that proper medical supervision and treatment can be instituted.

In larger plants with a full-time medical department staff this problem is fairly well taken care of by pre-placement physical examinations with routine chest X-rays before hiring. Periodic physical examinations of employees also help to take care of this problem.

At Saco-Lowell we have a procedure requiring every employee, absent three days or more because of personal illness, or illness in the family, to report to the medical department before returning to work. Physical examination at that time, along with case history, may indicate the necessity of a chest X-ray. As a result we have picked up some conditions that probably would not have been brought up as early without the reporting procedure. Many people, out three days, and even more, because of upper respiratory diseases, never see a doctor before they return to work.

This reporting procedure could be used by all industries with a medical department. Small industries would not be able to do this, of course. However, as a suggestion, it might be well for small industries to contact their local hospitals and make arrangements for chest X-rays of employees. In many localities this has been quite successful. At the present time the

Webber Hospital in Biddeford has just started a chest X-ray service. It is hoped that the smaller industries in the community will avail themselves of this new service.

Statistics from the National Safety Council estimate that 2% of the industrial plants employ over 500 persons, while 70% of industry employs less than 25 people. In these smaller and more numerous industrial plants, a great deal of educational work and case finding are necessary to reach these people. Mass chest X-ray programs are certainly indicated. Much has been done, but I am sure that further emphasis on the small industries would be a great help in controlling the spread of tuberculosis.

An industrial educational program should involve the employer; the family doctor; the employee and the various public health agencies in the area. Under such a program each of these individuals and groups have well-defined responsibilities.

The employer has a definite responsibility to make sure that his employees are not harboring active tuberculosis.

In various states throughout the country there are many examples of an employer's being held responsible when an employee contracts tuberculosis from a fellow-employee and workmen's compensation has been awarded.

In addition to the compensability of pulmonary tuberculosis under workmen's compensation there are other tuberculosis lesions that may be compensable. For example, about two years ago we had a young employee who was walking across the factory yard one windy day when some foreign body flew into his eye. He came into the plant hospital for treatment. The foreign body was easily removed. Three days later he came back with a terrific iritis. I sent him to our eye consultant. After extensive work-up it was found that the employee has a tuberculosis iritis which was compensable because of the foreign body episode that lighted up the smouldering infection. Many other incidents are on record of non-pulmonary tuberculosis causing compensable disease in industry.

Because of this it is imperative that industries know, to the best of their ability, the physical condition of old and new employees. Pre-placement and periodic physical examinations with chest X-rays are imperative. When industry realizes this, less loss will be experienced from the disease of tuberculosis.

The family physician has a definite responsibility, which is three-fold: First, to the patient and his family; second, to the community as a whole; and, third, to the employer of his patient.

In many instances the family physician hesitates to tell his patient the actual diagnosis of this condition. Even when active tuberculosis has been proved by X-ray, sputum exams, guinea pig inoculations, etc.,

there are many cases on record of patients who have not been informed of their condition. Granted that we need changed attitudes toward this disease, in the meantime such negligent procedures will not assist in cutting down on our tuberculosis problem.

When situations of this sort exist, the community as a whole becomes involved — public health is jeopardized — the spread rather than the control of tuberculosis is enhanced.

When the uninformed patient is employed by an industrial organization the employer is on the spot. Not knowing the man's physical condition, the company has no chance to evaluate the situation and take whatever steps are necessary. This unwitting negligence may result in compensation claims which the employer has to pay.

Industry can be of great help in many instances, by getting people under proper treatment early. Often people try to continue to work against their doctor's advice. If industry is informed of the condition (in definite terms, such as infectious or contagious disease) immediate steps can be taken to isolate the patient from his fellow employees with the assurance that as soon as he is non-infectious he can return to work. I don't see where this would be contrary to any doctor-patient relationship.* (See Note.) In fact, all industry wants to do is strengthen the doctor-patient-employer relationship so that full understanding and coöperation can bring about recovery in the shortest time possible.

One may ask: "How does organized labor feel about this?" All I can say is that in the various industries with which I have been associated these labor organizations have given full coöperation in fighting tuberculosis. They do not want their membership decimated by such diseases.

As an illustration, about thirteen months ago the occupational disease law in Maine was amended to include silicosis as an occupational disease. Because of this I felt that we should have a record of the chest conditions of all personnel working in our foundry.

Knowing that about 70% of an employee population will respond to a chest survey and that the other 30 hesitate (this hesitant group is the one you really want to reach), I approached the union with my problem. We wanted the survey to be on a voluntary basis, with 100% participation. The union stewards and other officials coöperated with supervision in kidding, shaming and occasionally getting a little rough in their talk about "working with a fellow who might have tuberculosis" and what was the result? The foundry was X-rayed 100% and it was understood that this would be a yearly occurrence.

We suspect, that if we had taken the initial arbitrary position that the program was compulsory, we

would have had resistance all along the line. Of course, if a final few refused, we should not have hesitated to make the examination compulsory.

The interesting thing was that as the year progressed many of these foundrymen would come into the medical department and ask when the next survey was to begin. At the present time we are finishing up our second annual foundry chest survey with the same 100% participation.

And finally, there is the responsibility of the public health agency. Close liaison between industry and public health agencies in the area is very important. In the case of small industries it may often be necessary for the agency workers to contact the employer and do most of the "selling" for a survey program in industry.

Many times an interchange of information is most helpful. As an example: After our last chest survey an employee was found to have active tuberculosis. We granted him a leave of absence for treatment and notified his own doctor of the findings. We suggested that the man go to his physician that very day, but the doctor had no success in getting the patient to follow instructions.

About three weeks later our employment manager received an inquiry from a large Connecticut firm. They were asking about the work record of this same employee.

The man told them he had been laid off at Saco-Lowell and he was seeking employment in Connecticut. We informed this company that the man was out of Saco-Lowell on sick leave because of an infectious disease and that when he was well he could return here.

This Connecticut company has a good medical program and they would have become aware of the man's condition through their routine chest examination. But what if this man had sought employment in some of the smaller industries where chest X-rays are not routine? An interchange of vital information under such circumstances will help cut down the spread of this disease.

Having recognized the problem and having discovered an active case and placed it under immediate treatment, what is the next step? — Rehabilitation of the patient!

As in accident work, rehabilitation should begin at the time the diagnosis is made and treatment started. The attitude of others toward the stricken employee is important. Unguarded remarks early in the case may prolong recovery. Assurance of treatment and early recovery will help put the patient in the frame of mind to want to get well.

After the case has been arrested, getting back to

Continued on page 366

LETTER FROM THE PRESIDENT AND CHAIRMAN MEDICAL ADVISORY COMMITTEE TO THE MEMBERS REGARDING MALPRACTICE INSURANCE AND RATES THEREFOR

To the Members:

Rates charged by insurance companies for most other forms of liability insurance have increased substantially in recent years, and as of September 2 "National Bureau" insurance companies increased their rates for physician's and surgeon's liability insurance. You are probably insured in one of the two "National Bureau" companies which the Association recommends, and the premium you pay on any policy coming up for renewal after September 2, 1952, will be higher.

Consequently the officers of the Association, Chairman of the Medical Advisory Committee, our counsel, Herbert E. Locke, and our Executive Secretary, Mayo Payson, have re-examined this matter of malpractice insurance with some care, particularly to see if the insurance could be procured from some non-Bureau company at a cost to you less than the newly established Bureau rates. Careful study and conference with representatives of non-Bureau companies make it clear that nothing is to be gained by an attempt to shift to non-Bureau companies. The principal, if not only, non-Bureau companies which might write physician's and surgeon's liability in Maine are the Employers and the Lumbermens. They were approached. Neither of them cares to write this insurance on the terms desired by the Association which have been in effect for years with the two approved insurers, the Hartford and the Loyalty. Both base their rates and their policy toward their insureds on a nationwide basis, rather than experience in the State of Maine.

Specifically these companies will not enter into the gentleman's agreement with us which is re-stated hereafter and contains several matters of vital interest.

At present the Lumbermens rate on physician's basic coverage is \$25.00 as against the Bureau rate of \$30.00, but as of November 1st the Lumbermens is putting into effect new and higher rates.

For many years the Hartford and the Loyalty Group have been the recommended companies of the Maine Medical Association. Both these companies have been coöperative, liberal on coverage questions which arise sometimes, and decidedly satisfactory in the opinion of the officers, the Medical Advisory Committee, and the Association's counsel who has worked with these companies as counsel for the Association throughout the whole period.

The gentleman's agreement, as recently re-stated by one of the two agreed insurers, is as follows:

1. "The company will insure all, but only, members of the Maine Medical Association in good standing." (Self-explanatory.)
2. "The company will not entertain or write so-called 'group' coverage. Each risk will be considered as an individual one and will be written on a separate policy." (To avoid unpleasant legal complications which would ensue if it were written as a "group" policy.)
3. "The company will consider the coverage of the policy as applying to a physician or surgeon who does only examination, but no treatment." (A physician may examine, without treating, a person who makes claim for workmen's compensation, or similar claim, where no physician-patient relationship exists. The physician's report is unfavorable to that claim. That person brings suit against the physician claiming that the report was either fraudulent or negligent so that the claimant did not recover the money he should. Such cases have happened in Maine. Purpose of this No. 3 provision is to make sure there is coverage under the policy in such claims.)
4. "The company will not cancel a policy without first submitting the complete facts to the Medical Advisory Committee of the Maine Medical Association." (This is very important to

the M. D. There have been practically no cancellations against members during the thirty-odd years the gentleman's agreement has been in effect. If an insured is cancelled by a non-Bureau company he will not be accepted by the recommended companies.)

5. "The final decision regarding the settlement of a claim will be left in the hands of the insured physician or surgeon." (Self-explanatory, and often of great importance to the M. D.)
6. "The Association's counsel, Locke, Campbell, Reid & Hebert of Augusta, shall be employed as counsel by the insurance company in defense of claims." (Self-explanatory.)

New rates. National Bureau rates, effective September 2, 1952 (same rate in all Bureau companies) is as follows:

1. Physician—\$30.00
 Additional charges:
 - 1) Employed Physician—each \$15.00
 - 2) Employed Surgeon—each \$22.50
 - 3) Employed Technician—each \$ 5.00
 - (The above listed classification applies to each radium, X-ray therapy and pathological technician.)
 - 4) X-ray therapy—by insured physician \$45.00
 - 5) X-ray therapy—by employed physician or surgeon—each \$23.00
2. Surgeon—\$45.00
 Additional charges:
 - 1) Employed Physician—each \$15.00
 - 2) Employed Surgeon—each \$22.50
 - 3) Employed Technician—each \$ 5.00
 - (The above listed classification applies to each radium, X-ray therapy and pathological technician.)
 - 4) X-ray therapy—by insured physician \$45.00
 - 5) X-ray therapy—by employed physician or surgeon—each \$23.00
3. Partnership Liability—additional premium of 50% of the rate of each partners policy.
4. All of the foregoing rates are for standard basic limits of \$5,000/\$15,000. For higher limits these rates should be multiplied by the following factors:
 - 1) \$10,000/30,000 — \$1.35 \$30,000/ 90,000 — \$1.77
 - 2) \$15,000/45,000 — \$1.55 \$40,000/120,000 — \$1.84
 - 3) \$20,000/60,000 — \$1.64 \$50,000/150,000 — \$1.89
 - 4) \$25,000/75,000 — \$1.71 \$75,000/225,000 — \$2.00
 - 5) \$100,000/300,000 — \$2.06

In conclusion. Your President and Chairman of Medical Advisory Committee ask that you insure with either the Hartford or the Loyalty, pursuant to the agreements which the Association has had for years with those two companies so that you may secure for yourself the benefits which accrue to you by reason of those agreements.

If you have any question regarding the details or want further information, call our Executive Secretary at Portland, 3-1331, or our general counsel, Herbert E. Locke, Augusta, 1910. Mr. Locke has gone into this very thoroughly the past few months with the insurers and has all the details in mind.

EUGENE H. DRAKE, *President.*
 ALLAN WOODCOCK, *Chairman,*
Medical Advisory Committee.

THE CLINICAL SESSION

Once again the Clinical Session was held in Waterville and once again our colleagues in Kennebec County presented a varied and instructive program. We take this occasion to congratulate them. The local committee comprising, Dr. Frederick T. Hill, Chairman, Dr. L. A. Guite, Dr. Joseph Michaud, Dr. William B. Grow, Dr. John F. Reynolds and Dr. Irving I. Goodof, deserve our thanks.

Sunday evening, through the courtesy of the Department of Health and Welfare, Dr. Dean Fisher, presented Dr. Joseph Melnick, Associate Professor of Microbiology at the Yale Medical School and Dr. Robert Ward, Professor of Pediatrics at New York University School of Medicine, who spoke on the subject of Poliomyelitis. They were a well-informed team.

Dr. Melnick described some laboratory work which gives promise of developing a rapid method for determining the quantity and quality of virus in the patient. This painstaking research carried on at the Yale Medical School aims to perfect methods by which the patient's blood may be studied for a virus by means of tissue neutralization tests and eventually by animal inoculation tests. The diagnosis in puzzling types of infections which are classified as polio of one type or another would become more accurate; treatment and prognosis likewise.

Dr. Ward reviewed the epidemiology of polio, the theories of invasion, the behavior of the virus in the body and the question of treatment. His exposition was clear, well grounded on factual data and instructive. Dr. Ward included a report on Dr. Hammon's recent experiment with gamma globulin. He drew a table which indicated that gamma globulin has a value in reducing paralysis if given sufficiently early. He believed that it was a valuable experiment, soundly accomplished and definitely suggestive of the value of gamma globulin.

The general session on Monday evening was devoted to a discussion of the Civil Defense program. Dr. Ernest E. Huber of Natick, Massachusetts, North Eastern Region Medical officer for the Federal Civil Defense Agency, led off with the statement that Russia could execute "successfully devastating attacks on our large cities." He declared that up to the present moment nothing had changed the opinion of the National Security Council and the Joint Chiefs of Staff that the threat of a conflict is real. While he congratulated the State of Maine on the well-planned program of Civil Defense which its medical leaders have developed, he left no doubt in the minds of his listeners that a great deal of volunteer work needs to be done in order to train workers to act efficiently at the time of a disaster which could create chaos. Our State Chairman, Dr. Charles Steele, widely recognized as an authority on the organization of medical personnel for Civil Defense, emphasized the importance of Dr. Huber's thesis.

During the session, members of the Woman's Auxiliary held a luncheon meeting at which Mr. E. P. Wells, President of the Maine Health Council, addressed the group. During the business meeting the ladies pledged their support to the American Medical Education Foundation, and, indeed, took up a collection for the cause and instructed the treasurer to forward it to the headquarters of the Foundation.

The Clinical Program offered over forty topics for Section discussion. Such an abundance of material plus operating clinics gave the members a great chance to hear and see what is going on in the practice of medicine today. It was gratifying to talk with men from all over the State and especially interesting to hear the news from Jonesport and Van Buren. It was a good meeting.

LEWISTON-AUBURN EMERGENCY MEDICAL CALL SYSTEM

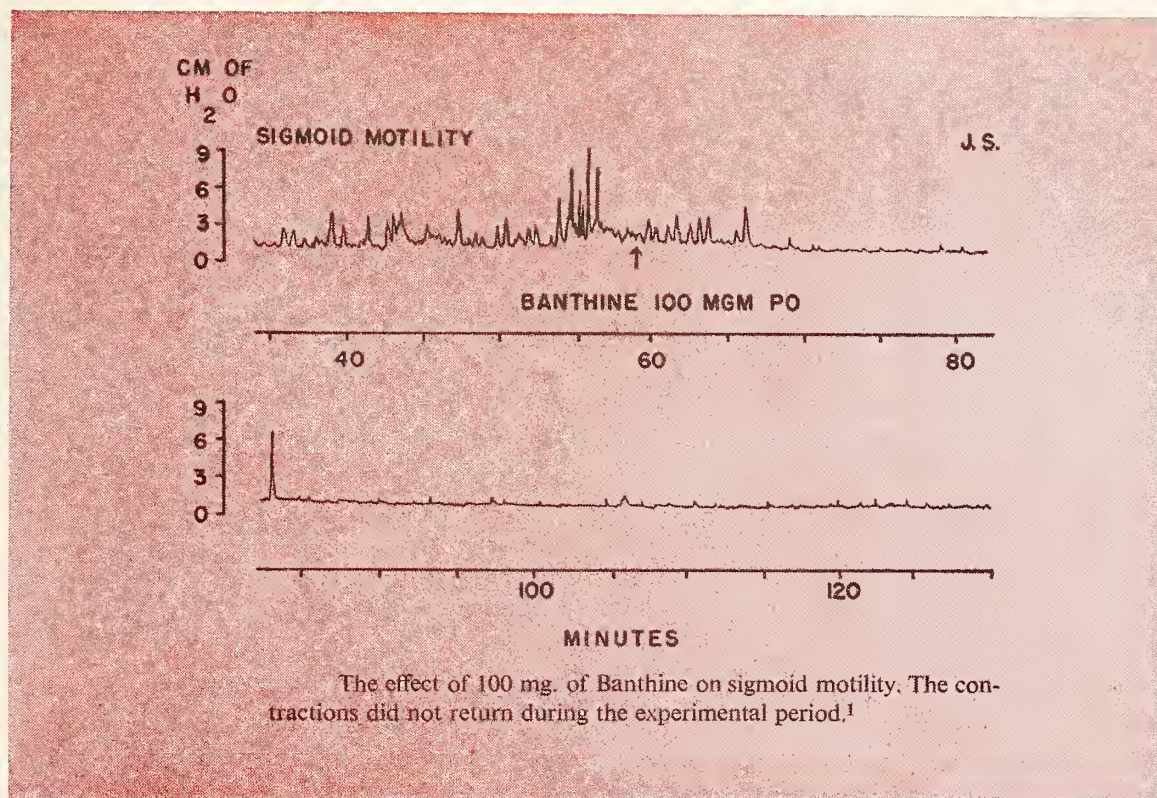
Lewiston-Auburn have an emergency medical call system which has been working for more than two years. The Androscoggin County Society sponsored it and the staff members of the two hospitals, Central Maine General and St. Mary's, set up the system for supplying the doctors to be on duty and answer the calls.

Two doctors are selected by each Committee of the two staffs to be on call two nights each month. This gives a choice of four men who are available each night. Their names are posted on the bulletin boards of the hospitals and when an emergency call comes in to the hospital switchboard from the central tele-

phone office, from police or from an individual, one of the doctors on duty that night is called. This system works along through the staffs and includes each doctor under age 60.

Certain phases of the system are not yet satisfactory but the Committee is still working on it to see if the flaws cannot be eliminated.

We are happy to report this service by the doctors of Lewiston and Auburn to the people whom they serve. This is the second area in this state where such a desirable service is afforded. The Portland Emergency Service was reported in the January, 1952, issue of the JOURNAL. Are there others?



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"...has a prolonged inhibitory effect on human gastrointestinal motility....

*The duration of its action is striking,...."*¹

It has also been observed that definite retardation in gastrointestinal transit time in individuals with hypermotility was attributable to the therapeutic effect of Banthine.²

BANTHINE® Bromide (brand of methantheline bromide)—a true anticholinergic—is available for oral and parenteral use.



1. Kern, F., Jr.; Almy, T. P., and Stolk, N. J.: Effects of Certain Antispasmodic Drugs on the Intact Human Colon, with Special Reference to Banthine (β -Diethylaminoethyl Xanthene-9-Carboxylate Methobromide), *Am. J. Med.* 11:67 (July) 1951.

2. Lepore, M. J.; Golden, R., and Flood, C. A.: Oral Banthine, an Effective Depressor of Gastrointestinal Motility, *Gastroenterology* 17:551 (April) 1951.

RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

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COUNTY SOCIETY NOTES

Hancock

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, October 8, 1952. There were ten members and the guest speaker present.

Albert S. Crawford, M. D., of Waterville, speaker of the evening, gave a brief but informative talk on Head Injuries, which was followed by an informal discussion of various neurological and neurosurgical problems.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Kennebec

A regular meeting of the Kennebec County Medical Association at the Augusta House, Augusta, Maine, September 18, 1952, began with dinner at 7.00 P. M. There were thirty-two members and guests present at the dinner.

Francis H. Sleeper, M. D., of Augusta, President of the Kennebec County Association, presided. He announced the Fall Clinical Session to be held in Waterville, October 26 and 27. He read a letter from A. H. Garcelon, D. D. S., Director of the State Division of Dental Health of the Bureau of Health, requesting that the Association consider a resolution endorsing the principle of fluoridation of community water supplies. After some discussion the matter was tabled pending further consideration.

Albert S. Crawford, M. D., of Waterville, was elected to membership.

Martyn A. Vickers, M. D., of Bangor, guest speaker, spoke on Plant Dermatitis. He stated that many plants may be classed as primary irritants because of high incidence—others truly allergic—reaction is caused by oleo resins—may be caused by burning—may be caused by flowers or hard woods (men working on them may become afflicted). He discussed a long list of causes of dermatitis—wool, ointments, feathers, pollens, synthetic rubber, metals (watches, earrings, jewelry), sprays (nasal), contact from drugs, resins in lacquers and plastics. Treatment; ointment, wet pack, antihistamine. Dr. Vickers covered the field well; his talk proved most interesting; an excellent speaker.

A. H. MORRELL, M. D.,
Secretary.

Knox

At a recent meeting of the Knox County Medical Society the following members were elected to represent the society in the House of Delegates of the Maine Medical Association:

Delegates: Robert L. Allen, M. D., Rockland, and William A. McLellan, M. D., Camden.

Alternates: Howard L. Apollonio, M. D., Rockland, and Donald H. Brown, M. D., Rockland.

Lincoln - Sagadahoc

A regular meeting of the Lincoln-Sagadahoc County Medical Society was held at The Ledges, Wiscasset, Maine, Tuesday evening, October 21, 1952. There were eleven members and the guest speaker present.

Edward L. Kinder, Jr., M. D., of Bath, was elected to membership. Dr. Kinder is employed as an industrial surgeon at the Bath Iron Works.

Allen McGrath, Jr., M. D., of the New England Medical Center, Boston, gave a well organized, interesting discussion on Handling Abnormalities of the Menses, which is summarized as follows: Amenorrhea and excessive menstrual bleeding are symptoms of some underlying condition. When one of these symptoms is encountered, the doctor should keep in mind the outline of the possible causes. Hormonal imbalance is rarely a cause. The etiological condition should be diagnosed and then treated.

M. W. WESTERMEYER, M. D.,
Secretary.

Oxford

The annual meeting of the Oxford County Medical Society was held at Bethel Inn, Bethel, Maine, Wednesday, October 8, 1952.

The following officers were elected for the coming year:

President, David S. Broughton, M. D., Rumford.

Vice President, Thomas P. Nangle, M. D., West Paris.

Secretary-Treasurer, Dexter E. Elmore, M. D., Dixfield.

Auxiliary Committee on Legislation, Chesley W. Nelson, M. D., Norway.

Councilors: Henry M. Howard, M. D., Rumford (1 year); Walter G. Dixon, M. D., Norway (2 years); Harriett L. Noyes, M. D., Rumford (3 years).

Delegates to the Maine Medical Association: Albert P. Royal, M. D., Rumford (1 year); and Pierre B. Aucoin, M. D., Rumford (2 years).

Alternates: James A. MacDougall, M. D., Rumford (1 year); and Harry L. Harper, M. D., South Paris (2 years).

John F. Hughes, M. D., of Dixfield, was elected to membership.

Ralph A. Goodwin, Jr., M. D., of Auburn, guest speaker, presented a paper on Eye Problems in General Practice.

DEXTER E. ELSEMORE, M. D.,
Secretary.

Washington

The annual meeting of the Washington County Medical Society was held in the Congregational Vestry at East Machias, Maine, October 24, 1952. There were twenty-six members and guests present. After an excellent dinner served by members of the Ladies' Union Society, DaCosta F. Bennett, M. D., of Lubec, president of the Washington County Society, introduced Eugene H. Drake, M. D., of Portland, president of the State Association. Dr. Drake gave a resume of the State Association's affairs. He spoke particularly of the centennial celebration of the Association to be held in

Portland, June 21-24, 1953, for which extensive plans are now being made. Maine-born or Maine-educated doctors, who have risen to eminence in their profession, are being invited to attend the centennial session as guest speakers.

Dr. Drake referred to Dr. Micajah Hawkes of Eastport, a doctor and surgeon of prominence in the early days, even prior to 1820. Although Dr. Hawkes was a well trained physician by the standards of those days his name is best known because of a law suit which was then a cause celebre.

Mr. Mayo Payson, executive secretary of the Maine Medical Association, spoke relative to voluntary insurance plans.

Wilbur B. Manter, M. D., of Bangor, guest speaker, spoke on the Use of Surgery in Heart Disease, which with catheterization of the heart has opened up a whole new field of surgery. Dr. Manter mentioned the new artificial heart which will greatly facilitate heart surgery. His talk was followed by a period of active discussion.

At the business meeting it was voted to approve blood collection in Washington County by the American Red Cross.

The following officers were elected:

President, James C. Bates, M. D., Eastport.

Vice President, Robert G. MacBride, M. D., Lubec.

Secretary-Treasurer, Karl V. Larson, M. D., East Machias.

Delegate to the Maine Medical Association: Samuel R. Webber, M. D., Calais.

Alternate: John T. Metcalf, M. D., Calais.

Board of Censors for Three Years: L. W. Brownrigg, M. D., St. Stephens, N. B.

Dr. Bates, the incoming president, spoke for a few minutes, thanking the speakers and the members of the Ladies' Auxiliary for their attendance.

It was voted to hold the next meeting in January at St. Stephens, N. B., in conjunction with the St. Croix Medical Society.

KARL V. LARSON, M. D.,
Secretary.

New Members

Kennebec

Albert S. Crawford, M. D., Waterville, Maine.

Lincoln-Sagadahoc

Edward L. Kinder, Jr., M. D., 1027 Washington Street, Bath, Maine.

Oxford

John F. Hughes, M. D., Dixfield, Maine.

Deceased

Lester F. Norris, M. D., 68, died at Madison, Maine, October 30, 1952. Dr. Norris, who had practiced medicine in Madison since 1922, was a member of the Somerset County Medical Society.

COMING MEETINGS

Maine Medical Association Centennial Session, Eastland Hotel, Portland, Maine, June 21-24, 1953. Chairman Centennial Committee, Dr. C. Lawrence Holt, Portland.

American Medical Association Clinical Session, Denver, Colorado, December 2-5. Secretary, Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Ill. The House of Delegates will convene at 10.00 A. M., Tuesday, December 2. The Scientific Program will open Tuesday, December 2, at 1.30 P. M., and will continue on Wednesday and Thursday mornings and afternoons, December 3 and 4, and on Friday morning, December 5, closing at 12.00 noon. The November 1st issue of "The Journal of the American Medical Association," pages 863-887, contains the Scientific Program, Color Television Program, a list of Scientific and Technical Exhibits, as well as information relative to Registration, etc.

American Academy of Dermatology and Syphilology, Palmer House, Chicago, Ill., December 6-11. Secretary, Dr. John E. Rauschkolb, P. O. Box 6565, Cleveland 1, Ohio.

American Academy of Obstetrics and Gynecology, Palmer House, Chicago, December 15-17. Secretary, Dr. Ralph A. Reis, 116 S. Michigan Blvd., Chicago 3, Ill. The meeting, which is the First Annual Clinical Session of the Academy, will feature six general sessions and 48 discussion groups of 40 Fellows each. The annual banquet Tuesday evening, December 16, will feature an address by the retiring president, Dr. Carl P. Huber of Indianapolis.

American Association of Medical Clinics, Cosmopolitan Hotel, Denver, Colorado, November 30-December 1. Executive Director, Dr. Edwin P. Jordan, Box 114, Charlottesville, Va.

American Psychoanalytic Association, New Yorker Hotel, New York City, December 4-7. Secretary, Dr. LeRoy M. A. Maeder, 1910 Rittenhouse Square, Philadelphia 3, Pa.

Annual Congress on Industrial Health, Drake Hotel, Chicago, January 21-22, 1953. Improving health services of our nation's working force will be the overall theme of the Annual Congress on Industrial Health, sponsored by the AMA's Council on Industrial Health. Workers, industrial leaders and medical men will assemble for this 13th annual conference. Highlights of the Congress include sessions on small plant industrial health services, human relations, and aspects of occupational cancer. One important session will endeavor to answer the question—how can management, labor and medicine best help maintain the health of our national work force? On Tuesday, January 20, the day before the Congress convenes, a joint conference will be held for members of the Council and Chairmen of State Society committees on Industrial Health. The afternoon program will be devoted to round table discussions stressing three main areas of industrial health — education, service and research. Dr. Gracie R. Rowntree, Chairman of the Committee on Industrial Health of the Kentucky State Medical Association, will preside.

Association for Research in Nervous and Mental Diseases, Hotel Roosevelt, New York, December 12-13. Secretary, Dr. Clarence C. Hare, 700 West 168th St., New York 32, N. Y.

Association of State and Territorial Health Officers, Washington, D. C., December 8-11. Secretary, Dr. John D. Porterfield, 306 Ohio Depts. Bldg., Columbus 15, Ohio.

Radiological Society of North America, Netherland Plaza and Sheraton-Gibson Hotels, Cincinnati, December 7-12. Secretary, Dr. Donald S. Childs, 713 East Genesee St., Syracuse 2, N. Y.

NEWS AND NOTES

Tumor Clinics

Sisters Hospital, Waterville, Maine, 1st and 3rd Thursdays, 10.00-11.00 A. M., Armand L. Guite, M. D., Director.

Augusta General Hospital, Augusta, Maine, 1st Monday, 9.00 A. M., Leon D. Herring, M. D., Director.

Bath Memorial Hospital, Bath, Maine, 2nd Tuesday, 3.00-5.00 P. M., Francis A. Winchenbach, M. D., Director.

Maine General Hospital, Portland, Maine, Thursdays, 10.00 A. M., Joseph E. Porter, M. D., Director.

Presque Isle General Hospital, Presque Isle, Maine, Thursdays, 10.00-12.00 A. M., Storer W. Boone, M. D., Director.

Madigan Memorial Hospital, Houlton, Maine, 2nd and 4th Wednesdays, 10.00-12.00 A. M., Joseph A. Donovan, M. D., Director.

Central Maine General Hospital, Lewiston, Maine, Tuesdays, 10.00 A. M., Waldo A. Clapp, M. D., Director.

St. Mary's General Hospital, Lewiston, Maine, Wednesdays, 3.30 P. M., Romeo A. Beliveau, M. D., Director.

Eastern Maine General Hospital, Bangor, Maine, Thursdays, 10.30 A. M., Magnus F. Ridlon, M. D., Director.

Thayer Hospital, Waterville, Maine, Tuesdays, 10.00-11.00 A. M., Irving I. Goodof, M. D., Director.

Department of Health and Welfare
Division of Maternal and Child Health
(Including Services for Crippled Children)
Clinic Schedule — 1952

ORTHOPEDIC CLINICS

Portland — Maine General Hospital, 9.00-11.00 a. m.: July 14, Aug. 11, Sept. 8, Oct. 13, Nov. 3, Dec. 8.

Lewiston — Central Maine General Hospital, 9.00-11.00 a. m.: July 18, Aug. 15, Sept. 19, Oct. 17, Nov. 14, Dec. 12.

Rumford — Community Hospital, 1.30-3.00 p. m.: Sept. 17, Dec. 17.

Waterville — Thayer Hospital, 1.30-3.00 p. m.: Aug. 28, Oct. 23, Dec. 18.

Machias — Normal School, 1.30-3.00 p. m.: Aug. 13, Oct. 8, Dec. 10.

Presque Isle — Northern Maine Sanatorium, 9.00-11.00 a. m.—1.00-3.00 p. m.: July 9, Sept. 9, Nov. 5.

Wanted—General Practitioner to take up his residence on Chebeague Island, Maine (near Portland). For older physician who desires to taper off large practice and still keep active and live an enjoyable quiet life, we think we have a good proposition. For particulars, write P. A. Seabury, President, Chebeague Island, Inc., Chebeague Island, Maine.

Houlton — Aroostook General Hospital, 9.00-11.00 a. m.: July 8, Nov. 4.

Bangor — Eastern Maine General Hospital, 1.30-3.00 p. m.: July 24, Sept. 25, Nov. 20.

CARDIAC CLINICS

Portland — Maine General Hospital, 9.00-12.00 a. m.: Will be held every Friday with the exception of holidays.

Bangor — Eastern Maine General Hospital, 9.00-11.00 a. m.: July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

HARD-OF-HEARING CLINICS

Waterville — Thayer Hospital, 1.30-3.30 p. m.: Sept. 3, Dec. 3.

PEDIATRIC CLINICS

Bangor — Eastern Maine General Hospital, 1.30 p. m.: July 25, Aug. 22, Sept. 26, Oct. 24, Nov. 21, Dec. 19.

Waterville — Thayer Hospital, 1.30 p. m.: July 1, Aug. 5, Sept. 2, Oct. 7, Nov. 4, Dec. 2.

Presque Isle — Northern Maine Sanatorium, 1.30 p. m.: July 23, Sept. 24, Nov. 19.

By Appointment Only

PRACTICE FOR SALE

Introduction—office equipment, furniture and instruments. New office in excellent location. Fully equipped to move in, rent reasonable. Leaving soon for Pacific Coast.

H. E. SMALL, M. D.
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HOSPITAL STAFF MEETINGS
Open to the Profession

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital Notre Dame Hospital	2nd Thursday 2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General St. Mary's General	2nd Thursday 2nd Monday
Portland	Maine Eye and Ear Infirmary Maine General Mercy	1st Tuesday 2nd Friday 4th Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Tuesday
Waterville	Sisters Thayer	2nd Tuesday Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.

Industry and Tuberculosis—Continued from page 357

work is usually paramount in the patient's mind. When assured that the case is arrested, industry should try to find a job for this employee.

But many employers are hesitant to reemploy these people because they may be taking on a liability. In many states where workmen's compensation boards are lenient aggravation of an old condition during employment may be found compensable. Until there is better understanding by compensation boards of the need to rehabilitate tubercular patients this hesitancy by many industries to rehire arrested tubercular patients will be present.

At such a time it is important that industry works hand in hand with the family doctor, various local organizations and social workers to get this person something to do. It may mean only part-time work for a while. Then, as things progress, fuller employment. In certain instances the man may never go back on his old job but something else can be found for him.

Often this new, easier job has a lower rate of pay. Then it will be necessary to work with the man to help him readjust his living habits to his reduced income.

When industry takes this attitude, rather than one of "we can't rehire this employee," then industry takes its place as a leader in the community and commands increased respect, loyalty and coöperation from all employees.

Tuberculosis is not something new in industry but as the years go by more and more attention should be focused on the problem.

We know that tuberculosis is not a disease which strikes only young people, more and more adults are succumbing. With the average age of industrial workers rising each decade, increased education and more case findings are paramount in controlling tuberculosis, not only among the industrial population, but for the entire country, with such organizations as the national, district, state and county associations leading the way.

* Note: Since this discussion was given, the September issue of *Medical Economics* has been circulated. The article "What the Ethics Code Says About Physician-Patient Relations" highlights the statement just made. "Under what conditions may a doctor reveal a privileged communication?" (1) When it is "required by the laws of the state" or (2) When it is necessary "to protect a healthy person against communicable disease."

Correction

THE EDITORIAL BOARD AND THE JOURNAL. The fifth and sixth paragraphs of this editorial, which appeared in the October issue of the *Journal*, pages 332 and 333, should read as follows:

The President's Page was discussed and it was the consensus of opinion that material submitted for publication by the President is of interest to every member of the Association and would be read if made a part of the Editorial Section, instead of on the customary full page with considerable margin. So in the future this section will carry a message from your President when interests of the Association require it.

This covers some of the major portions of the discussion. In addition the County Society Notes,

Necrologies, News and Notes, etc., were commented on at length. It was agreed that these sections of the *JOURNAL* are of particular importance to members of the Association and that every effort should be made to keep them up to date and timely. This is where the individual members and county secretaries can be of assistance; the individual members by sending personal items of accomplishments, professional or otherwise; the county secretaries by prompt reporting of county meetings, changes in membership and notification of deceased members.

Students Read "Today's Health"

"Today's Health" magazine is taking its place with regular textbooks on the college campus. More than 1300 freshman physical education students at the University of Illinois at Champaign-Urbana are reading the magazine as part of their regular classroom assignment. A special supplementary study sheet called "Classroom Discussion Topics" is being supplied free of charge by the AMA's Bureau of Health Education as an aid to classroom discussion.

AMA's Story Off the Presses

A new pamphlet—"The AMAzing Story"—prepared by the American Medical Association, gives the general public a brief summary of the ways in which the AMA serves an average American family. This booklet pictorializes the many ways the Association serves Mr. and Mrs. Joe Typical and family. The pamphlet will be distributed to all AMA members December 1.



The Journal of the Maine Medical Association

Volume Forty-Three

Portland, Maine, December, 1952

No. 12

DIGITALIS

WILBUR B. MANTER, M. D., Bangor, Maine

Digitalis, as is well known, is the most commonly used and the single most valuable drug for the treatment of congestive heart failure. It has been familiar to all of us since medical school. Perhaps because of this familiarity, many of us are the more inclined to prescribe it by rote, without due thought as to exactly what we can hope to accomplish with it and as to how we can make best use of it.

The details of the pharmacology and the principles of the physiologic effects of the drug, so far as known, are elsewhere available. Except for one paragraph, that which follows is thought to apply directly to the clinical use of digitalis, the complications from its use, and the treatment of the latter. It might also be added that nothing new follows and that agreement with the opinions expressed is not expected to be complete. The term *digitalis* as used includes crude digitalis leaf and its active principles.

In general, the indications for digitalis are clearly defined—these include chiefly congestive heart failure and certain arrhythmias.

The drug should be used in the presence of congestive heart failure from any cause, regardless of the heart rate or the blood pressure. The results attained will vary. More caution is necessary in the presence of certain conditions that make the heart more susceptible to serious toxic drug effects such as acute myocardial infarction, rheumatic carditis and heart block.

It is usually the drug of first choice in the treatment of auricular tachycardias, including flutter. It slows the ventricular rate with auricular fibrillation and, particularly in cases of recent onset, may even result in reversion to regular sinus rhythm.

The late Henry A. Christian wrote in 1933¹ that he was inclined to advise the use of digitalis for adults, particularly after the age of 40, and especially for those older, in whom some enlargement of the heart could be detected, or, if not detected, could be anticipated by reason of evidence of organic valve lesion or of the presence of hypertension. This concept is disputed. In general, it is felt if digitalis is to be used before symptoms or signs of congestive heart failure are present that the heart should at least be definitely enlarged. It is to be remembered that digitalis is a potent drug. Christian himself advised doses in the usual therapeutic range and not small "tonic" doses. The latter are ineffective and useless.

Digitalis is not indicated, of course, for the treatment of symptoms ordinarily associated with congestive heart failure when due to other causes—such symptoms include sinus tachycardia, hyperventilation and non-cardiac edema. The psyche of the patient with cardiac neurosis will be the more disturbed by its use. It is not indicated just because of the presence of heart murmurs, hypertension, angina or shock.

This is a convenient time to mention the use of

digitalis before surgery. The indications are the same as already mentioned. All patients with auricular fibrillation should be digitalized. It should be seriously considered for patients likely to develop fibrillation under the stress of surgery, such as well-developed mitral stenosis and hyperthyroidism. It should be used for a grossly large heart not in failure, particularly in older individuals. Unfortunately for such patients, there is no good clinical guide to the dosage necessary for reasonably effective digitalization and yet without danger of toxicity. The anesthesia, the procedure itself, or the underlying illness may make the heart more susceptible to serious toxic effect.

The contraindications for the drug do not hold in the presence of a good indication. The absence of a good indication is generally held as the main contraindication. In paroxysmal ventricular tachycardia not terminated by quinidine and with heart failure present, digitalis should be used. This tachycardia may be precipitated by giving digitalis in the presence of frequent ventricular premature beats, but they may clear with digitalis if due to or associated with congestive heart failure. Syncope related to transient complete heart block or hypersensitive carotid sinuses may be brought about more frequently if digitalis is given. If necessary to use digitalis in the presence of the latter, atropine is advised. The peripheral congestion from chronic constrictive pericarditis is not heart failure, and digitalis is contraindicated except to slow auricular fibrillation, if present. The use of digitalis and quinidine together is to be generally avoided. Under certain circumstances with careful handling, the advantages of the combination may outweigh the risk² but procaine amide, "Pronestyl," might better be substituted for quinidine in these instances. Calcium should not be given intravenously to the digitalized patient, as the two drugs may be synergistic in their effect on the heart.

Numerous preparations of digitalis are available. As good a result can be attained with one as another. It is generally agreed that familiarity with the dosage and what to expect from one or two forms of the drug is good practice. For oral use, particularly for maintenance purposes, digitalis leaf in pill form is still as satisfactory as any preparation. The disadvantage of difficult standardization can be minimized by consistently using the product of a single reliable firm. An advantage may be that toxicity may more often be first manifest by symptoms of no serious consequence, though perhaps disagreeable, rather than by serious, often occult arrhythmias as seems to be more frequent with the purified preparations. Of the glycosides, digitoxin, put out by some companies, under trade names, is still the most widely used. Its action time of six hours is relatively slow as is the excretion time of two to three weeks or possibly

longer. These times are comparable to those of digitalis leaf. The slow excretion makes maintenance of a uniform effect easier. However, slow accumulation on the same daily dose may result in toxicity after several or more weeks. 0.1 gm. (gr. 1½) of digitalis leaf is considered the equivalent of 0.1 mgm. of digitoxin. 0.15 gm. of digitalis leaf or 0.15 mgm. of digitoxin is probably the average daily adult maintenance dose.

A good general outline for initial use of digitalis for adults is to use either 0.1 gm. (gr. 1½) of digitalis leaf or 0.1 mgm. of digitoxin per 10 pounds body weight in divided doses given not oftener than every six hours over several days. Half of the calculated digitalizing dose of digitoxin may be given safely as a first dose, if desired, followed by 0.2 mgm. every eight hours. More or less will be given according to the results in the individual case. Though the onset of full action of these two preparations is slow, it is the very unusual case in which attainment of "digitalization" in less than a day or two is necessary or advisable. More often it is better to take more time than this.

For the very rare case requiring rapid intravenous digitalization, "Cedilanid," with the directions in the package, is a good preparation. The full dose must not be given if one cannot be certain that the patient has not had digitalis for at least a month.

At such times as maintenance is necessary intravenously, digitoxin would be so given in the same dose as the oral dose, or in place of the equivalent oral dose of digitalis leaf.

The above statements regarding dose are *average dose*. Perhaps these doses will apply to a majority of patients. The remainder are not a small minority. The desired result in any event may only be attained by careful attention to detail. Using the divided dose method of digitalization, only the maintenance dose is continued after the desired effect is attained. Small changes of the maintenance dose, sometimes small as in the order of a pill or two more or less per week, may be necessary to avoid ineffective therapy on the one hand or toxicity on the other. The range of daily maintenance dose may vary with the individual between such extremes as 0.05 gm. to 0.4 gm. (gr. ¾ to gr. VI) of digitalis or 0.05 mgm. to 0.4 mgm. of digitoxin. Some statements follow in an attempt to clarify the rationale.

For digitalis to be effective in congestive heart failure, a certain concentration of the drug must be reached and maintained in the body. This concentration necessary for therapeutic value may be close to that producing toxicity. It is interesting and important that a certain fraction of the total drug present in the body will be excreted daily. Theoretically then, if only an exact maintenance dose for a given

individual is given daily, the concentration necessary for therapeutic effect will ultimately be reached. If less than a sufficient daily maintenance dose is given to a patient who has already a sufficient concentration for therapeutic effect, the concentration will gradually fall off to a level that may be considerably lower than that necessary for this desired effect. If slightly more than a maintenance dose is given, the patient may, even as long as some weeks later, develop toxic effects.

The usual toxic symptoms from digitalis including loss of appetite, nausea, vomiting, diarrhea and blurred or yellow vision are well known. A less common symptom is mental disturbance. Digitalis poisoning has probably become more frequent in recent years. The increased use of the potent glycosides, and the misinterpretation of the perhaps misleading average single digitalizing dose of 1.2 mgm. of digitoxin and average maintenance dose of 0.2 mgm. daily advocated by Gold³ may be partly responsible. Although the 1.2 mgm. dose of digitoxin will rarely cause serious toxicity, one cannot always be certain that the patient has not had digitalis already in one form or another. There is good evidence that 0.2 mgm. daily will lead to toxicity for many patients.⁴ In addition, the toxic effects, probably more often from digitoxin than digitalis leaf, are likely to first be manifest by rhythm disturbances or electrocardiographic evidence in the absence of the clinical symptoms noted above. Under such circumstances, the condition may be easily overlooked.

The rhythm disturbances from digitalis toxicity can be of any known type. The more common are premature contractions including bigeminy, auricular fibrillation and paroxysmal tachycardia. Abnormally slow heart rate is common only with auricular fibrillation. Fatalities are usually attributed to ventricular fibrillation.

It is well to remember that rapid heart rate may not always be an indication for more digitalis. In fact, even increasing congestive heart failure may be a manifestation of toxicity.⁵ Heart failure not previously present has resulted from overdosage of digitalis. Unfortunately the sickest patients seem to require closer to the toxic range for therapeutic effect,

and it is in such patients that it is often hardest to differentiate symptoms of digitalis overdosage from symptoms of the illness.

Ordinarily stopping the drug is sufficient treatment for digitalis poisoning. Particularly in the presence of arrhythmias, which may be dangerous in themselves, more positive means of treatment may be indicated. A good review of the subject is available.⁶ The heart appears to be more sensitive to digitalis in the presence of potassium lack. Increased digitalis sensitivity to the point of toxicity has been noted following vigorous diuresis, as with mercurials, and in other clinical states which may be associated with considerable potassium loss. Potassium administration may be indicated for arrhythmias due to digitalis intoxication. With good urinary output, oral potassium chloride in doses of 4-8 gm./day is generally safe. Used cautiously, procaine amide ("Pronestyl") may be safer to administer in the presence of serious arrhythmias from digitalis toxicity than quinidine. It may be used when kidney function is impaired and potassium is contraindicated.

In conclusion, a categorical statement can be made that the digitalis preparation familiar to the physician is indicated for all congestive heart failure and certain arrhythmias in an amount sufficient but no more than enough to attain and maintain the optimum effect without toxicity. It is emphasized that this amount necessary varies and must be worked out for each individual patient.

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CENTENNIAL NEWS

First Annual Meeting

The First Annual Meeting of the Maine Medical Association was held in Winthrop Hall, Augusta, June 1, 1853, Dr. Isaac Lincoln of Brunswick, President, in the Chair.

FEMALE URINARY INCONTINENCE DUE TO ECTOPIC URETER*

J. ROBERT FEELEY, M. D., and B. G. CLARKE, M. D.

A history of urinary incontinence from birth, associated with otherwise normal urination, should lead to the suspicion of an extravesical ureteral opening. Surgical treatment of this condition is uniformly successful, and early diagnosis is of paramount importance to mental and physical hygiene.

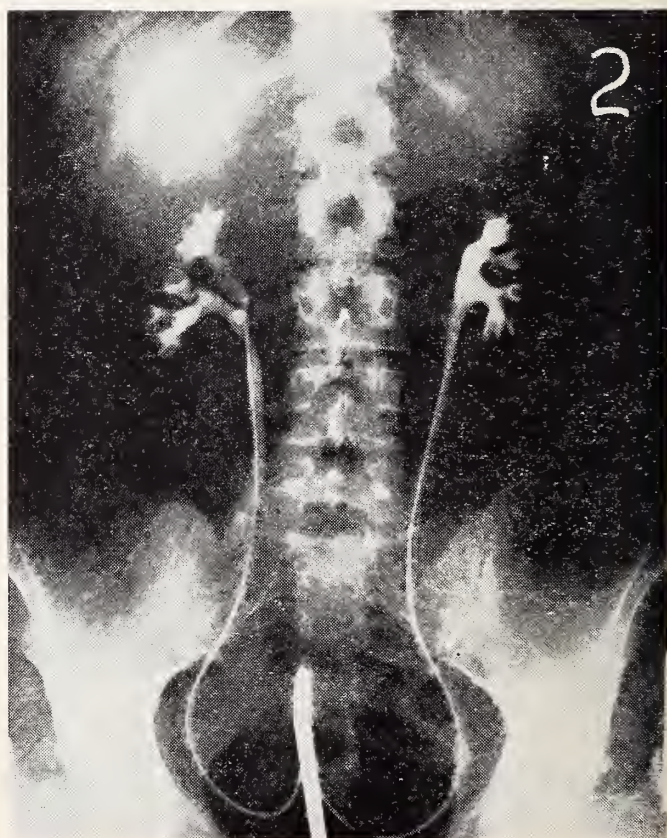
Although a combination of anomalies may exist, the commonest condition encountered is a unilateral complete duplication of kidney and renal pelvis, with the ureter from the upper pole terminating ectopically.^{1,2} If this is beyond sphincteric control, urinary incontinence results.³ The abnormal opening occurs most often in the vestibule, not infrequently in the vagina, and rarely in the cervix or body of the uterus.

When possible, identification and catheterization of the ectopic opening and pyelographic delineation of the ureter permits accurate diagnosis. This cannot be done if the orifice is obscured by chronic inflammatory changes or if it enters the cervix or body of the uterus. Intravenous urograms should be made in every case. The anomalous segment of renal tissue, however, may be hypoplastic or damaged by chronic obstruction or infection and the dye will fail to outline it, as happened in our case and those of others.^{4,5} For the same reason, intravenous injection of indigocarmine though often valuable in localizing the ectopic orifice⁶ is not always dependable because the dye may be excreted in insufficient concentration to be seen. Study of the soft tissue outlines of the kidney as seen in the urogram, however, may as in the cases of Blaisdell⁷ and others,^{8,9} suggest the presence of a supernumerary renal segment and lead to the diagnosis.

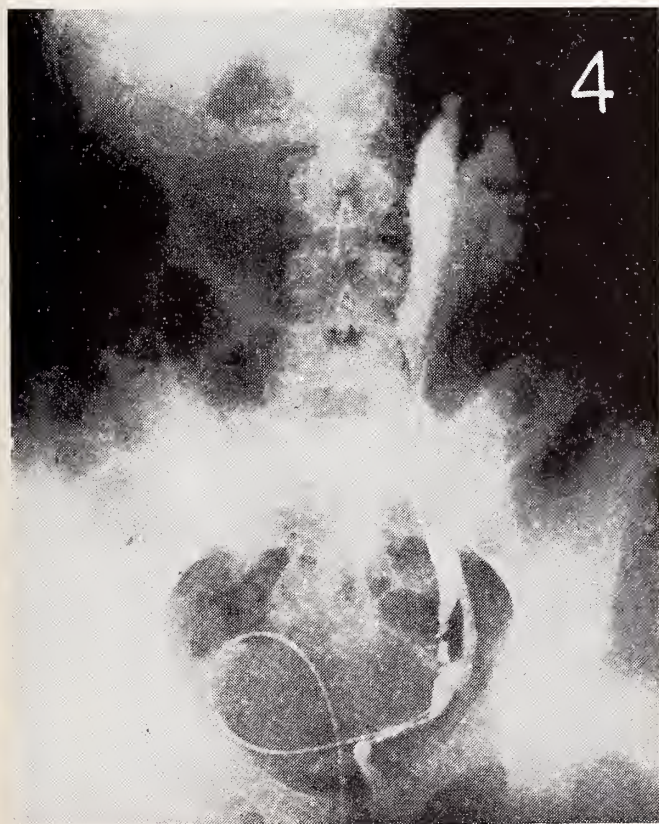
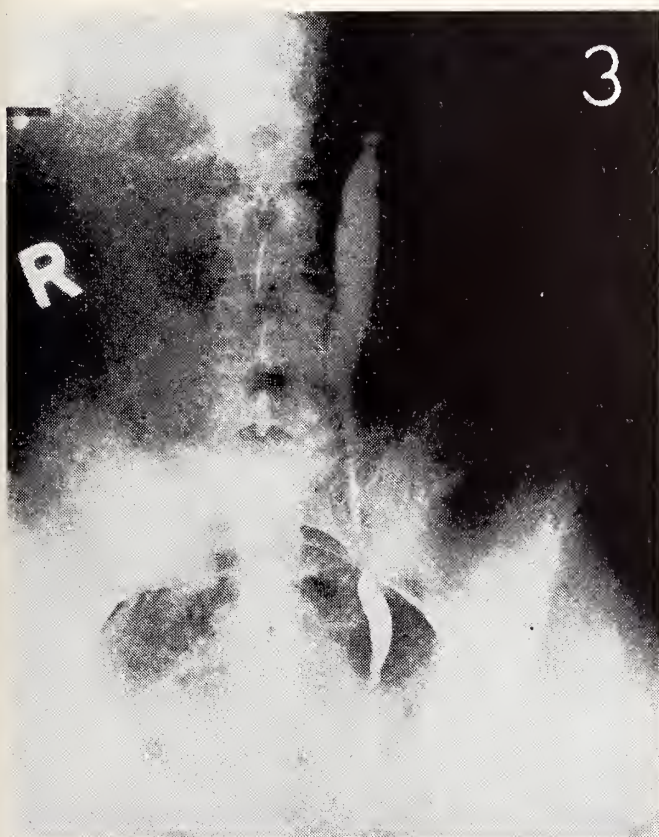
Heminephrectomy and ureterectomy, when possible, are the treatment of choice. In some cases, heminephrectomy cannot be done. If there is no infection, ureterectomy will give good results.¹⁰ In other cases, nephrectomy may be required.¹¹

REPORT OF A CASE

E. K. G. (79411), a 26-year-old housewife, had a lifelong history of constant leakage of urine, less while lying in bed at night and worse after morning voiding. Otherwise she voided normally and had no frequency or other symptoms of which she was aware. Her family physician had noted a small dimple within the vestibule posterior to the urethral meatus in the midline, and referred her to one of us



* From the Urological Service, Eastern Maine General Hospital.



(J. F. R.) for study. Other than this dimple, general physical examination disclosed no abnormality, and the blood pressure was 120 systolic, 72 diastolic. Blood counts, non-protein nitrogen and urinalysis were normal. An intravenous urogram (Figure 1) showed prompt dye excretion, a bifid upper ureter and pelvis on the right and a comparatively small renal pelvis on the left. The outlines of the upper pole of the left kidney were indistinct. Cystoscopy revealed a normal bladder and ureteral orifices, and retrograde pyelograms (Figure 2) corroborated previous findings. The dimple within the vestibule could not be catheterized or probed. Nevertheless, the history and findings strongly suggested the presence of an ectopic ureter and examination under anesthesia was performed.

Under anesthesia the dimple was shown to be the ectopic orifice and was catheterized and dye injected. The ureter coursed up the left vaginal wall, angulated sharply at the cervix and extended upward to a small single calyx (Figure 3). Cystoscopy and catheterization of the intravesical ureteral orifice on the left showed that the ectopic, dilated ureter originated from the upper pole of the left kidney (Figure 4). Left heminephrectomy was carried out and it was possible to resect, in addition, 10 centimeters of the dilated ureter. Microscopic examination of the specimen showed a thinned, fibrotic ureteral wall and dysplastic renal tissue. Save for a small urinary fistula from the site of heminephrectomy which healed spontaneously, the postoperative course was uncomplicated and she was entirely relieved of her urinary incontinence.

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CYSTOURETHROGRAMS IN THE DIAGNOSIS OF DISEASES OF THE URETHRA, PROSTATE AND BLADDER NECK*

B. G. CLARKE, M. D.**

Lesions of the urethra, prostate and bladder neck produce characteristic deformities which may be outlined by filling the urethra with radiopaque contrast media. Cystourethrography, unlike cystoscopy, does not require that the operator be specially trained in the use of diagnostic instruments. It yields permanent graphic records which may be used for diagnosis and for comparison in following the progress of treatment. The cystourethrogram is, in itself, of primary diagnostic importance in the study of prostatic and urethral diverticula and abscess cavities, of urethral sinuses and strictures, and of the abnormal sphincters of the neurogenic bladder.¹ It permits accurate study in cases of prostatism in which cystoscopy is prevented by excessive tortuosity or elongation of the prostatic urethra.² The cystourethrogram is superior to conventional air or dye cystograms in the study of certain tumors about the bladder neck.³ It is a valuable adjunct to cystourethroscopy in the diagnosis of prostatic hyperplasia, bars and cancers.⁴

Development of the Method

Cunningham,⁵ in 1910, produced the first X-rays of the urethra using radiopaque dye. In 1921, Haudek⁶ showed that satisfactory visualization of the prostatic urethra was possible if the X-ray exposure were made during injection of a moving column of dye through the sphincters. A year later, Béclère and Henry⁷ introduced the oblique position in radiography of the urethra, and in the same decade, use of viscous contrast media was first employed. Flocks,⁸ working at the University of Iowa Hospitals, amassed a large series of observations which he published in 1933 showing reliable correlation between X-ray pictures and the well recognized anatomic and pathologic entities which involve urethra, prostate, and bladder neck. Edling,^{9,10} in Stockholm, added further to the value of the method by showing that X-rays made during voiding as well as injection of the contrast medium may be used to study the physiology of the organs.

Contrast Media

Fatal embolism may result from urethral instillation of oily and other insoluble substances.^{11,12,13} The urethro-cavernous-venous reflux from which this results is accounted for by ramifications of the glands of Littre beyond the mucosal and fibromuscular walls of the urethra to become enmeshed by the inner sinusoids of the corpus spongiosum of the urethra.¹⁴ Any contrast medium used must therefore be water-soluble and nontoxic when introduced intravenously. We have used Skiodan (Methiodal sodium, Winthrop-Stearns) in 15% concentration without encountering difficulty, and others^{15,16} have reported on favorable experimental and clinical experience with Visco-Rayopaque, a medium which is reported to be water-miscible and non-toxic.

Technic

In all cases, a preliminary survey film of the region to be studied is exposed. If indicated, air or dye cystograms are made by filling the bladder through a catheter. The bladder is then evacuated and injection is made with the operator's hands protected by a lead shield⁸ or one of the specially constructed syringes.^{10,17,18} It has been our practice, with the patient's pelvis tilted in a 45-degree angle, to inject about 15 c.c. of dye to fill the urethra. At this point, sphincter resistance is felt and gradually overcome during further injection of another 20 c.c. during which the X-ray film is exposed. A similar exposure is made with the patient supine, and then exposures are made in supine and oblique positions as the dye is voided. Nine cases are presented, in which this method was employed and yielded diagnostic information which was corroborated by cystourethroscopy and verified by operation and histologic study of tissues.

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*From the Urological Service, Eastern Maine General Hospital.

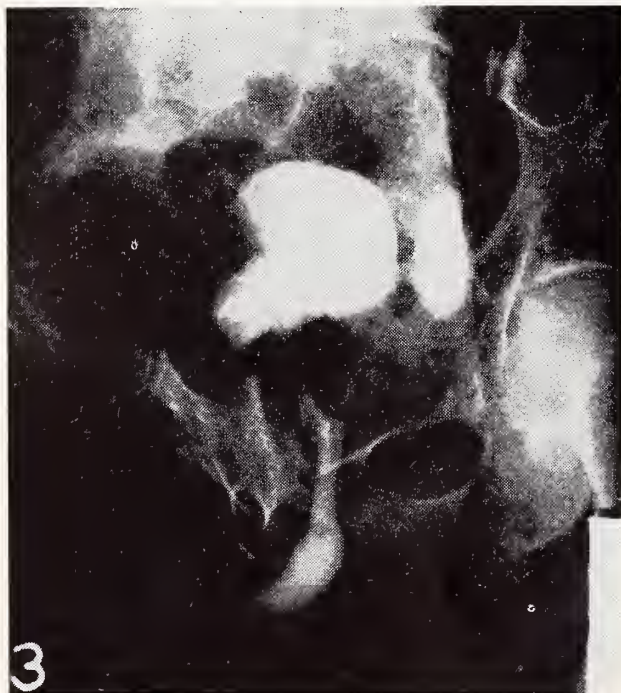
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Case 1. Prostatic adenomyomatosis. In the frontal view (A), intravesically protruding lateral lobes of the adenomatous gland compress and deflect the prostatic urethra. In the oblique view (B), a large median lobe is seen protruding within the bladder and overlying the urethra. The bladder is trabeculated, and the external sphincter is indicated by an arrow.



Case 2. Prostatic adenomyomatosis, oblique view. The prostatic urethra is tilted and compressed by subvesically hypertrophied lobes, and an anterior conelike projection of the trabeculated bladder wall appears at the site of the urachus. The shadow of the prostatic colliculus is indicated by an arrow.



Case 3. Prostatic carcinoma, oblique view. Distortion of the prostatic urethra and intravesical protrusion of the malignancy. A diverticulum arises from the posterior bladder wall.



Case 4. Prostatic carcinoma, frontal view. Narrowing and lateral deflection of the prostatic urethra; elevation and invasion of the base of the bladder by irregularly nodular masses of cancer.



Case 5. Frontal view, surgical absence of prostate and prostatic urethra after retropubic total prostatectomy. A stricture is seen at the site of the anastomosis between bladder and urethra, which yielded to dilatations.



Case 6. Obliteration of prostatic urethra by scar. A prostatectomy had been followed by an intractable stricture for which permanent cystostomy had been established. Instillation of dye into urethra (A) and into bladder (B) showed complete obliteration of prostatic urethra. A specimen of tissue obtained from this region by needle biopsy showed fibrosis.



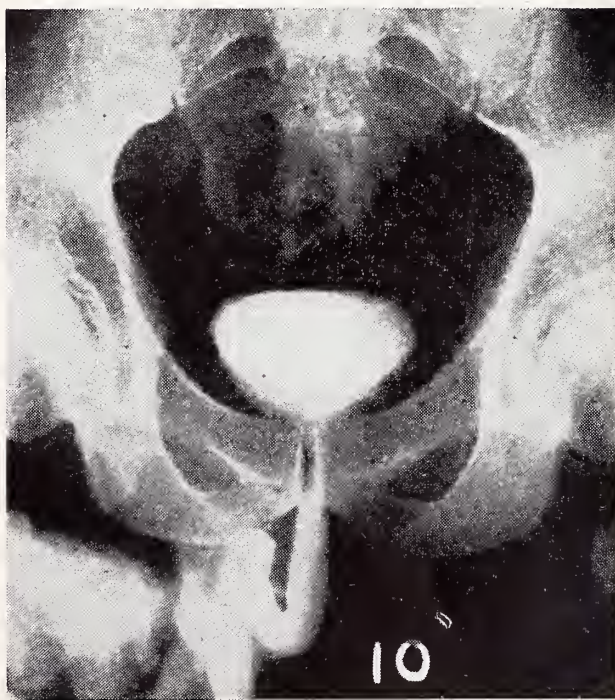
Case 7. Oblique view, contracture of bladder neck (single arrow), diverticula of bladder (two arrows), and fistula between bulbo-membranous urethra and perineoscrotal skin surface (three arrows).



Case 8. Chronic prostatitis, frontal view. Dilatation of prostatic urethra (arrows) due to prostatic atrophy and fibrosis; multiple dye-filled abscess cavities within the prostate. There is a small, incompletely filled diverticulum arising from the left wall of the bladder.



Case 9. Oblique view, urethral diverticulum in a woman. Air (arrows) had been injected into the bladder, and the diverticulum then filled with dye. At operation the neck of the diverticulum entered the posterior surface of the upper third of the urethra, and the diverticulum occupied the space between bladder and vagina.



Case 10. Normal 28-year-old man, frontal view. The cystourethrogram was made during injection and shows the smoothly contoured prostatic urethra in a contracted state.

ZIRCONIUM AND PYRIBENZAMINE IN TREATMENT OF IVY POISONING

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The active treatment of poison ivy dermatitis has been varied over the years with many substances used primarily to remove and neutralize the oleoresin of the plant. Removal has been accomplished by soaps and oil solvents. Neutralization or inactivation by oxidation has been accomplished by ferric chloride, potassium permanagate, sodium peroxide or perborate,^{1,2} and hydrogen peroxide.³ Enzymes as well have been used in a limited extent.⁴ Initial therapy has always been toward the removal of the oleoresin followed by medication to alleviate the vesiculation, pruritis, burning, and finally prevention of spread of the dermatitis.

In dermatitis venenata due to rhus toxicodendron, the active principle is not an oil but a toxic phenol called urushiol and chemically described as an ortho-hydroxy-benzene compound with an unsaturated hydrocarbon in the #3 position.⁵ Zirconium salts have been used on urushiol but their mode of action is still not clearly understood as reported by Cronk and Naumann,⁶ but there appears to be a chemical reaction of the salt and urushiol involving the hydroxyl groups and apparently a precipitation with some of the zirconium salts. Cronk⁶ feels that the toxic phenol fixes itself with the skin proteins and there is some time interval between the time of contact, individual sensitivity, and the quantitative saturation which involves the spreading phenomena. Realizing these three factors, zirconium salts have a clinical use for the treatment of active lesions, prophylaxis for the sensitive individual, and prevention of dermatitis and spread after contact with the oleoresin.

Cronk reported a study of the various salts of zirconium in conjunction with pyribenzamine cream on sensitive individuals, and he was able to prove that hydrous zirconium oxide, zirconium hydrate carbonate, and sodium zirconium glycolate cause in vitro precipitation and inactivation of urushiol. He also found that, when the oleoresin was applied to a urushiol sensitive skin, the poison ivy dermatitis was prevented by applying these salts in pyribenzamine cream one hour after the application of urushiol.⁶

The following illustrates cases of active rhus dermatitis varying in time of contact and extent of lesion. The clinical evaluation is attempted by using 2% pyribenzamine cream and 2% pyribenzamine cream with hydrous zirconium oxide. Tubes of these two were supplied the patients without informing them of the contents with instructions to use the zirconium-pyribenzamine preparation on the left side of the body and the 2% pyribenzamine cream on the right side of the body.

Case #1

Patient H. B., 32, white, female, when first seen on June 24, 1952, had a rhus dermatitis involving hands, forearms, lower extremities, and entire face, and all were symmetrically equal. The onset of the dermatitis was June 17, and she had had previous treatment with an antibiotic ointment followed by a tannic acid lotion. Treatment was instituted on June 24 with instructions as indicated above. Figure #1 shows the forearms before treatment was instituted. Figure #2 shows the same forearms forty-eight hours later and it will be noted that there is a marked subsidence of the lesion only where the preparation containing zirconium was used whereas on the right side the lesions appeared to be more active with the addition of some new lesions. The patient was then instructed to use the zirconium preparation on all lesions and they had practically disappeared when seen on June 30. The patient stated that the pruritis subsided in the lesions where the zirconium preparation was used about eight hours following the initial application.

Case #2

Patient T. F., 12 years, male, white, had a rhus dermatitis with vesico-bullous lesions. He had had previous episodes on his legs in July, 1951, and a second episode in June, 1952, involving his face. The present episode involved his feet and was eighteen hours old according to the history of his contact. Treatment was instituted as directed above and his mother stated that the pruritis ceased on the left foot in four to six hours. Twenty-four hours later she found that the left foot had cleared so well and that the right was unchanged and bothering him so much, that she shifted to the zirconium preparation without instruction. The dermatitis cleared completely in five days.

Case #3

Patient R. C., 24-year-old white female, had a rhus dermatitis of the arms, legs, thighs, and hips of twenty-four hours duration. She was instructed in the use of the two preparations as in Cases #1 and #2. She also noticed that the pruritis subsided on the left side of the body in twelve hours with diminution in the size of the vesicles without any appreciable change on the right side of the body. She also shifted to the zirconium preparation and found that the lesions had subsided 50% in twenty-four hours and were in a recovery stage in seventy-two hours.

Apparently these cases illustrate that the local application of zirconium-pyribenzamine cream neu-

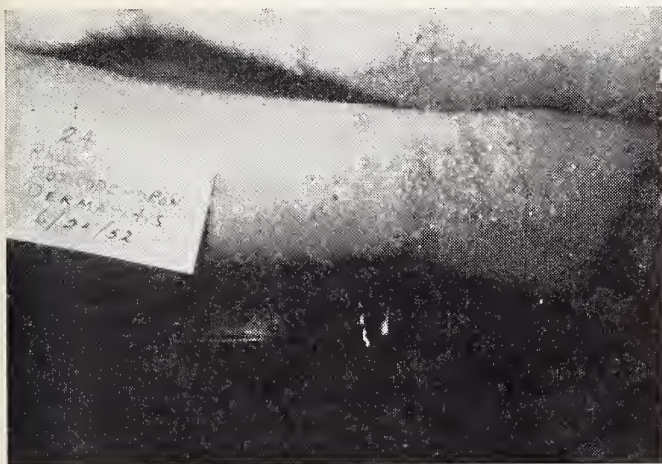


Figure 1

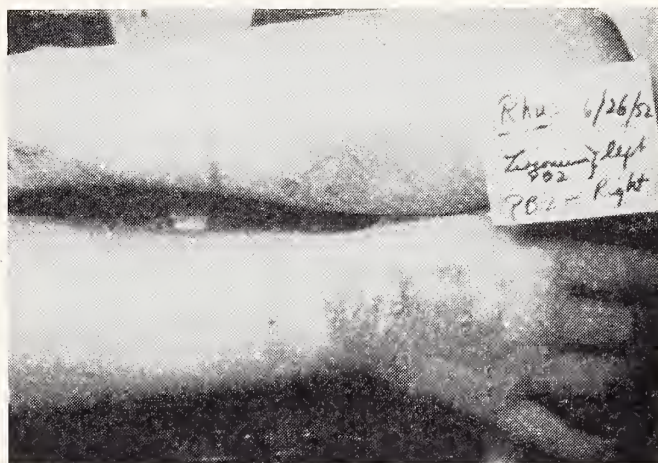


Figure 2

tralizes the urushiol in the oleoresin of poison ivy whether combined or uncombined with tissue proteins. In the second case and the third case the patient was seen relatively soon after the appearance of the dermatitis; however, in the first case the patient had had her dermatitis at least seven days from the onset on the initial lesions. The appearance of new lesions on the right side of her body after the application of pyribenzamine cream may have been due to either secondary contact with contaminated materials as clothing or the like or spreading through absorption of combined urushiol in the cream or direct spread of tissue debris. Here it is noteworthy that the zirconium preparation would have worked prophylactically whatever the manner of secondary contamination.

Blood and urine studies conducted on the above patients while under treatment remained within normal limits. There did not appear to be any toxicity due to the zirconium used in the preparations as would be expected with metals used by inunction. Prolonged use of the preparation is not recommended as the toxicity of zirconium by skin inunction has not been evaluated. Noteworthy also is the fact that the base used for the preparation is pyribenzamine cream, which is an antihistaminic which Sulzberger⁴ warns can cause topical reactions itself. It will be noted also that the topical application of zirconium hydrous oxide in pyribenzamine cream on one side of the body did not apparently influence the opposite side of the body indicating low or insufficient absorption through the skin to influence the urushiol contaminated skin on the right side of the body.

CONCLUSIONS

1. Pyribenzamine cream 2% with zirconium hydrous oxide 4% has a clinical use in the prophylaxis and treatment of poison ivy dermatitis.
2. Zirconium hydrous oxide 4% in pyribenzamine cream apparently inactivates the active principle of rhus oleoresin on the skin in some chemical or physical manner whether combined or uncombined with tissue proteins.
3. Zirconium hydrous oxide 4% apparently is not toxic in the strength used nor is it absorbed systemically by inunction in sufficient strength to influence active rhus lesions elsewhere on the body.
4. Pyribenzamine cream with zirconium is effective in relieving the pruritis of rhus dermatitis in twenty-four hours and is also effective on lesions existing from a few hours to several days.

* Material supplied by Ciba Pharmaceutical Products, Incorporated, Summit, New Jersey.

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A STANDARD TECHNIC FOR SPINAL ANESTHESIA

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Properly administered spinal anesthesia can produce nearly ideal conditions for the performance of most abdominal surgical procedures. The skeletal musculature is relaxed, the gut is contracted and diaphragmatic movement is rhythmical and unexaggerated. The explosion hazard is absent. Comparable conditions cannot be reproduced by present day inhalational or intravenous methods.

Untoward reactions with spinal anesthesia may occur and many are recorded in the medical literature. These accidents vary from the most trivial complaints to sudden death. We feel strongly that serious accidents are almost entirely attributable to errors in the administration and management of spinal anesthesia and are not inherent in the method itself. For this reason, we wish to present a single standard technic of spinal anesthesia which may be used in suitable patients for practically all common abdominal surgery. Such a technic, perfected by repetition and constantly scrutinized for possible error, is the best safeguard against the occurrence of complications with this valuable method of anesthesia.

Contraindications

Spinal anesthesia is still mistakenly reserved by some physicians for very poor risk patients. This unhappy practice has led to unjustified criticism of the method. Such selection can only be condemned since inhalational methods are usually safer under these circumstances. As with all other methods there are contraindications to spinal anesthesia which merit proper consideration.

1. Shock, severe anemia or acute hemorrhage.
2. Low blood volume.
3. Coronary insufficiency ("Angina pectoris").
4. Hypotension (not "normal" hypotension).
5. Operations above the diaphragm.
6. Infection of the injection site.
7. Lesions of the central nervous system.
8. Refusal of the method by the patient.
9. Caution with increased intra-abdominal pressure.

All patients must be carefully examined pre-operatively as with any other method of anesthesia and suitable premedication selected.

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Agent

Pontocaine is our agent of choice. Pontocaine-glucose solution* is manufactured in a five c.c. ampoule containing three mgm. of Pontocaine per c.c. in 6% glucose solution. This hyperbaric solution is long-acting, possesses high anesthetic potency and produces good relaxation. Although other drugs may be employed, familiarity with the use of the Pontocaine-glucose technic will enable the anesthetist to give safer, more predictable spinal anesthesia. Altering the agent to fit the operation is an unsafe practice for the general physician and is not recommended.

The duration of action of this agent may be increased by the addition of EpinephrineHCl 1:1000 to the solution in amounts up to 0.5 c.c. By this technic, relaxation for periods up to three hours may be attained and the more difficult method of fractional spinal anesthesia may often prove unnecessary. The following is a list of suggested dosages for the average adult:

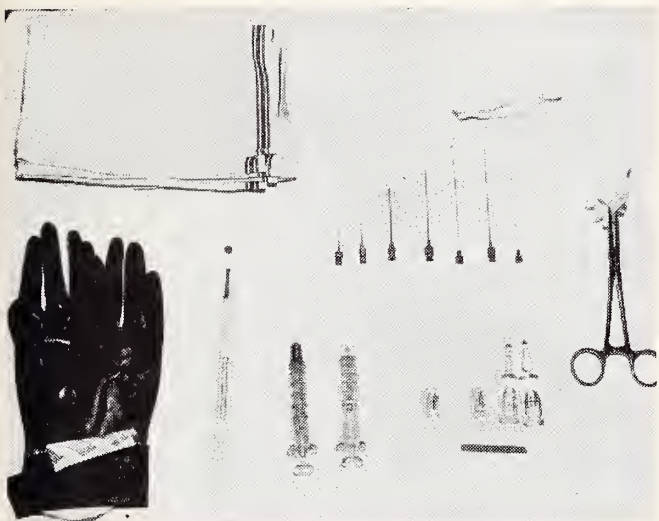
Site of Operation	Pontocaine Solution
Perineum	2.5 c.c. (8 mgm.)
Mid-abdomen	3.5 c.c. (11 mgm.)
Upper Abdomen	4.5-5 c.c. (13.5-15 mgm.)

Preparation of the Apparatus

Ampoules containing the anesthetic agent may be sterilized in a 1:1000 solution of aqueous Zephiran containing methylene blue as a coloring agent. The ampoules must be completely immersed for 18 hours prior to use. Sterilization of ampoules by autoclaving for 15 minutes is safer. For this reason our ampoules are autoclaved in the spinal set. The spinal set contains the items listed below and illustrated in Figure.

- 1 5 c.c. plain-tip syringe
- 1 5 c.c. Luerlok syringe
- 1 25 G. $\frac{3}{4}$ in. hypodermic needle
- 1 20 G. 2 in. needle
- 1 22 G. 2 in. needle
- 1 ampoule file
- 1 sponge forceps
- 1 20 G. spinal needle with stylet—3 in. short bevel
- 1 22 G. spinal needle with stylet—3 in. short bevel
- 2 towels
- 4 4 x 4 sponges
- 1 ampoule Pontocaine 0.3% in 6% dextrose—5 c.c.
- 1 ampoule Epinephrine 1:1000—1 c.c.
- 1 ampoule Ephedrine HCl 50 mgm.
- 1 ampoule Novocaine 1%—6 c.c.
- 1 "Diak" sterilization indicator

* Winthrop-Stearns.



The set is wrapped and autoclaved before use. Sterilization by boiling is hazardous. Immediately following use, the set is washed and rinsed. Needles are inspected and sharpened as necessary.

Technic of Administration

After the blood pressure has been taken, the patient is placed in the lateral position with thighs and knees flexed. The patient's head is placed on a small pillow and his neck flexed. The lower back and shoulders should be perpendicular to the table. The patient is gently supported in this position by the assistant, but not forcefully held or restrained in any manner.

The anesthetist, who has previously scrubbed, gloves his hands away from the opened spinal set. Even though an absorbable powder is used, he must not allow particles to drop on the set. Using the forceps and sponges from the set, he prepares a wide area of the back with 70% alcohol followed by tincture of Zephiran. The ampoules are inspected for discoloration or leakage of solution and are opened. The Luerlok syringe is filled with 1% Procaine, the 25 gauge needle attached, and this syringe is laid aside. The previously selected dose of Pontocaine-glucose solution is drawn into the plain-tip syringe through the 20 gauge needle. The plunger of this syringe is not touched. If this precaution is overlooked, particles of powder may adhere to the plunger and be injected into the subarachnoid space.

The fourth lumbar interspace is located. This usually lies on an imaginary line between the iliac crests. The third lumbar interspace may be used if the fourth is unsuitable. A skin wheal is raised over the selected interspace using the 25 gauge needle. The fine needle is replaced by the 22 gauge needle and the interspinous ligament is gently infiltrated. Frequent aspirations are performed to make certain that blood vessels or the dura have not been inadvertently entered. The ephedrine solution is drawn into the same

syringe and deposited deeply in the paraspinal muscles.

The spinal needle is selected and the point inspected for sharpness and fit of the stylet. Ordinarily the 22 gauge needle is used, but if there is calcification in the interspinous ligament the 20 gauge needle is preferred. The needle is grasped in the right hand and steadily advanced through the skin wheal, interspinous ligament, ligamentum flavum and finally, the dura.

The technic of lumbar puncture is difficult to describe. Proficiency in this technic depends upon the ability to interpret the sensations transmitted to the fingers as the point of the needle traverses structures of varying density. The frequently described "snap" of dural penetration can usually be felt. It may defy detection completely. The ability to perform successful lumbar punctures day after day on patients of varying physical structure develops only after many lumbar punctures have been performed.

There are a number of reasons for unsuccessful lumbar punctures:

1. Inexperience of the operator.
2. Insufficient local anesthesia.
3. Poor positioning of the patient.
4. Calcification of ligaments.
5. Lack of coöperation of the patient.

The successful tap is confirmed by the presence of clear spinal fluid on withdrawal of the stylet. If blood appears, the needle must be re-adjusted or withdrawn and inserted at another level. The hub of the needle is firmly held between thumb and index finger of the left hand with the dorsum of the hand steadied against the patient's back. This is most important for the maneuver prevents movement of the needle tip into the epidural space. Injection into the epidural space is probably the most common cause of failure with spinal anesthesia.

The plain-tip syringe is carefully attached. A small amount of spinal fluid is withdrawn to again prove that a blood vessel has not been entered and the anesthetic solution is injected at a rate of 0.5 c.c./sec. On completion of injection, a small amount of fluid is again aspirated to guarantee that the tip of the needle has remained in the subarachnoid space. The needle is quickly withdrawn, the patient is carefully turned on his back and a large pillow placed beneath his head and shoulders.

During insertion of the needle into the subarachnoid space paresthesias may occur. If the pain is temporary the procedure may continue. However, should pain occur during injection of the anesthetic solution, injection must be stopped and the needle reinserted. This usually means that a nerve is being infiltrated and permanent damage may result.

The level of ascending skin analgesia is tested by

pin-prick or pinch after the patient is turned. It should be remembered that the level of skin analgesia is usually present about two dermatomes above the level of effective muscular relaxation. It should also be remembered that the level of analgesia will arise about two segments after the start of surgery. The level may be made to rise by tilting the patient head down. A too rapid rise may be halted by tilting the patient feet down, since the spread of the solution can be controlled to a large extent by gravity.

Untoward Reactions to Spinal Anesthesia

Nearly all serious reactions to spinal anesthesia occur immediately following injection of the anesthetic solution. During this period, the anesthetist must devote his entire attention to the patient and must be aware of the prodromata of such reactions. As a general rule, all patients with anesthesia above the umbilicus or who exhibit any fall in blood pressure should receive oxygen. The three most common reactions are uncontrolled height, hypotension with peripheral circulatory failure, and intravascular injection. The signs of such reactions and treatment are outlined below in simplified form.

1. Uncontrolled height of anesthesia.

Recognized by:

- a. Anesthesia above the nipple line.
- b. Intercostal paralysis.
- c. Hypotension may occur.
- d. Drowsiness or unconsciousness.
- e. Complaint of difficulty in breathing.
- f. Complaint of numbness in arms.

Treatment:

- a. Artificial respiration with oxygen.
- b. Lower foot of table.
- c. Vasopressor agents — 10-20 mgm. I. V. Desoxyn if hypotension present.

2. Hypotension with peripheral circulatory failure.

(This reaction may be insidious in onset.)

Recognized by:

- a. Marked fall in BP with weak pulse.
- b. Patient becomes very quiet or sleepy.
- c. Face expressionless, features fixed.
- d. Nausea or vomiting.
- e. Excessive sweating about the head.
- f. Pallid cyanosis as peripheral circulation fails.

Treatment:

- a. Free airway.
- b. Artificial respiration with oxygen.
- c. I. V. fluids.
- d. I. V. vasoconstrictor agents.
- e. Elevation of legs.

3. Intravascular injection.

(This reaction is very rare and should be prevented by aspiration of spinal fluid prior to injection of solution. Reactions may be of two types: namely, the neurologic type and the circulatory type.)

Neurologic type—Recognized by:

- a. Talkativeness and excitement.
- b. Convulsions.

Treatment:

- a. Oxygen inhalation.
- b. Artificial respiration if necessary.
- c. Slow intravenous injection of short acting barbiturate such as Pentothal until reaction controlled.

Circulatory type—Recognized by:

- a. Hypotension, sweating.
- b. Nausea and vomiting.
- c. Air hunger.

Treatment:

- a. Oxygen.
- b. Artificial respiration.
- c. I. V. analeptics—epinephrine, ephedrine.
- d. I. V. fluids.

Supplements to Spinal Anesthesia

Nervous patients or those who have received insufficient premedication may be given small doses of morphine and scopolamine intravenously. Although we employ Pentothal-nitrous-oxide-oxygen for most patients, this is a personal preference and is not recommended for those unfamiliar with the method.

Important Facts to Remember

1. Use a standard method and become familiar with it.
2. Select patients carefully.
3. Beware of any type of contamination of the spinal set.
4. Hold spinal needle firmly in place while injecting.
5. Observe patient closely after injection.
6. Have all equipment necessary for treatment of reactions at hand, tested and ready for use.

Summary

Spinal anesthesia is the method of choice for many common surgical procedures. Disastrous untoward reactions are not inherent in the method, but are due to mismanagement. The incidence of such reactions can be reduced if a standardized procedure for administration is practiced. Such a method is presented.

CLINICAL TRIAL OF PRANTAL METHYLSULFATE IN ACUTE ASTHMATIC ATTACKS

Preliminary Report

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The relationship of the autonomic nervous system to clinical allergy is as yet imperfectly understood. In bronchial asthma, contraction of bronchial musculature, edema of the mucous membrane or excessive secretory activity of the bronchial glands interfere in varying degrees with the passage of air through the lower respiratory tract. All three conditions cited may be related to functional imbalance of the autonomic nervous system. Normally a state of dynamic equilibrium exists between the adrenergic (sympathetic) and cholinergic (parasympathetic) divisions of the autonomic nervous system with the former acting to decrease secretion and relax musculature, whereas the latter increases both muscle tone and glandular secretion. It is apparent then that either stimulation of the adrenergic system or blocking of the cholinergic system will result in a dynamic balance between the two systems in favor of the adrenergic component and thereby result in decreased muscle spasm, decreased secretion of glands and decreased edema of the mucous membrane.

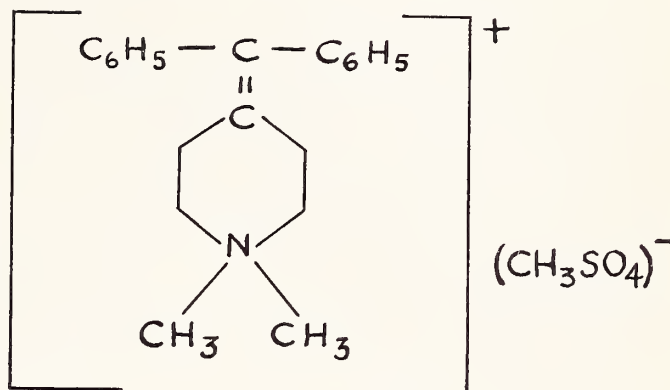
The use of the sympathomimetic drugs such as epinephrine, ephedrine or their derivatives although often beneficial in asthma, frequently is accompanied by tachycardia, weakness, pallor, excitement, jitteriness, or other undesirable side effects. Likewise, the use of atropine (a cholinergic blocking agent) in a dosage adequate to alter autonomic balance is often attended with constipation, tachycardia, urinary retention, xerostomia, mydriasis, or other side effects. The present report deals with the use of Prantal methylsulfate,* a recently introduced cholinergic blocking agent which has been employed in the therapy of hyperacidity, peptic ulcer, hyperhidrosis and other conditions associated with autonomic imbalance. Clinical reports¹⁻⁶ on the parenteral or oral use of the drug indicate the relative lack of side effects attendant with its use.

Chemistry:

Prantal methylsulfate is N, N-dimethyl-4-piperidylidene-1, 1-diphenylmethane methylsulfate, a quaternary amine with the following structural formula.⁷

This compound is soluble in water (50 mg. 1c.c.), methanol, ethanol, and chloroform, but insoluble in benzene and petroleum ether.

* Prantal methylsulfate was supplied by the Clinical Research Division of Schering Corporation through the courtesy of George Babcock, Jr., M. D.



Pharmacology:

Margolin et al.⁹ demonstrated the parasympathetic blocking effect of Prantal. They found that as little as 0.05 mg./kg. intravenously in dogs blocked the cardiac arrest caused by stimulation of the divided vagus nerve. Grimson¹ also observed this effect in dogs following the parenteral administration of 0.25 to 0.5 mg./kg. In neither experiment was there an effect on the sympathetic nervous system at this dosage level. Margolin demonstrated that the intravenous dosage of Prantal required to block the sympathetic system is 50 to 100 times that required for parasympathetic blockade.

In vivo, experiments with orally administered Prantal prevented bronchospasm and death in guinea pigs caused by intravenous injection of acetylcholine chloride (14 mg./kg.).

Toxicity:

Appropriate toxicity studies in several species indicate a high safety ratio between toxic and parasympatholytic dosages. In acute intravenous studies with dogs, Prantal was less vasodepressor than atropine sulfate or methantheline bromide. Subacute toxicity tests in mice, chronic experiments in rats, and detailed chronic studies with large over-dosages in dogs have not shown cumulative toxicity. During these investigations, growth rate and hematological findings were normal. At autopsy, no gross pathological changes were seen, and histopathological study of various organs disclosed no toxic effects. Subsequent clinical reports¹⁻⁶ covering the parenteral or oral administration of Prantal for periods of days to many months have not stated any acute or cumulative toxic effect of the drug.

Methods:

A series of 25 asthmatic patients seen during an acute paroxysm or in "status" were given a single intramuscular injection of Prantal in doses ranging from 10 mg. to 15 mg. (0.4 c.c. to 0.6 c.c.).

Results:

All patients (20) suffering from an acute asthmatic attack were relieved of symptoms in 2 to 5 minutes. The effect was often described as "dramatic" by the patients and adjudged to be equivalent to any other therapy received during previous attacks. A mild transitory dryness of the mouth was described by some patients. No increase in pulse rate was observed nor were there any other side effects reported. In two patients seen during a mild "status" there was a transient beneficial effect of the drug. Three cases in severe "status" showed no effect of the drug at this dosage level.

Discussion:

This preliminary report on the use of parenteral Prantal, a cholinergic blocking agent, is presented to stimulate interest in this approach to the therapy of the acute asthmatic patient. If one considers autonomic imbalance as a factor in asthma then it seems reasonable that cholinergic blockade will be as effective or perhaps more effective than the use of sympathomimetic drugs. As Prantal in therapeutic dosage is not an adrenergic blocking agent the combined use of this drug with "sympathetic-like" drugs is not

precluded. The possibility of preventing recurring asthmatic attacks in susceptible individuals by the use of Prantal Tablets will be investigated in those individuals exhibiting a favorable response to parenteral Prantal.

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- Cystourethrograms in the Diagnosis of Diseases of the Urethra, Prostate and Bladder Neck—Continued from page 372*
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CENTENNIAL SESSION — PORTLAND — JUNE 21-24, 1953

Why not make this the first notation on your calendar for 1953?

See Page 388 — this Issue.

CLINICO-PATHOLOGICAL EXERCISE

Surgical case presented at the Eastern Maine General Hospital

Discussion by DRs. ROBERT O. KELLOGG and WARD A. ALBRO

Edited by RICHARD C. WADSWORTH, M. D.

This 38-year-old white housewife was first admitted to the Eastern Maine General Hospital on July 10, 1952, with a chief complaint of pain and fever of six months' duration. About six months prior to admission she began having bouts of abdominal pain and fever lasting 48 hours. These spells came on every 2 to 4 weeks and were characterized by poorly localized abdominal pain and tenderness which seemed to be more marked on the right. There was also slightly increased spasm on the right and rebound tenderness throughout the abdomen. At the onsets of these spells there was usually nausea and vomiting. Bowels have been regular but during the last few days prior to admission she has had diarrhea. Her appetite has not been very good. Between attacks there appears to be a fullness in the right lower quadrant but no definite mass could be palpated. Gall bladder X-rays have been negative. Urine has been negative during and between attacks. Her temperature would go as high as 102° F. with the attacks.

F. H.: Her father died of old age. Her mother died of gall bladder trouble and had cancer of the breast. She has one sibling who is well. There is no history of tuberculosis, diabetes or heart trouble in the family.

P. H.: The patient has had the usual childhood diseases. No serious illnesses, accidents or operations. She has had no cough, difficulty in breathing, palpitation or night sweats.

Laboratory Findings: Blood, 7-11-52: Hb. 11 gms.; WBC 8,300; Neutro. 55; Eosin. 2; Baso. 1; Bands 6; Lymph. 35; Mono. 1. Blood, 7-17-52: WBC 10,000; Neutro. 71; Eosin. 1; Bands 13; Lymph. 11; Metamyel. 4. Urine, 7-12-52: Microscopic: Casts, none seen. Epithelium, occasional squamous. Pus cells 2-3/hpf. Blood, none seen. Mucous threads, many. Urine, 7-14-52: Yellow; cloudy; acid; albumin 0.01; sugar negative; acetone negative; pH 5.5. Microscopic: Crystals, few ca. oxalate. Epithelium, many. Pus cells, frequent w. b. c. Bacteria, many. Blood, occasional r. b. c. Sedimentation Rate, 7-11-52: 30 mm. in 50 minutes.

X-rays (7-15-52), Abdomen and Excretory Urograms: The lower poles of the kidneys seem to be displaced so that both kidneys lie close to the vertebrae and parallel to them. Lateral to the kidney there is a suggestion of soft tissue mass in either flank con-

tinuous with the upper quadrant densities and there may be splenomegaly and hepatomegaly to account for this displacement of kidneys and lateral densities. The whole abdomen is a little hazy suggesting peritoneal fluid. No definite small bowel gas is visualized but there appears to be some in the transverse colon although it does not suggest obstruction. A speckling of barium is noted in the right colon. The bony structures as demonstrated are not remarkable.

Both kidneys function well in so far as concentrating the opaque medium is concerned and demonstrate undilated urinary tracts which are without obstructive uropathy and without gross distortion. There is a pelvic mass measuring 12 x 10 cm. above which the ureters appear to deviate and it suggests an enlarged uterus, possibly a fibroid uterus or other tumor.

Chest Fluoroscopy and Films (7-16-52): Chest fluoroscopy and films now show free pleural fluid on either side, more on the left where there is a moderate amount and what on a supine bucky film of the chest appears to be basilar atelectasis presumably from elevation of the diaphragms. The visualized lung fields are not remarkable. Much of the heart configuration is obscured by the elevated diaphragms and fluid. Suggest thoracentesis. The diaphragms appear to move synchronously and well.

Upper Gastro-Intestinal Tract: Esophagus, stomach, duodenum: No intrinsic disease is evident. The interval films of the abdomen show slowed propulsion of bowel content apparently not in the ileum yet at 9 hours, although a 24-hour film shows it in the large bowel. There is suggestion of peritoneal fluid in the overall density and of some sort of vague mass occupying now the left abdomen, at times the small bowel appearing to be displaced to the right although perhaps this is just a manifestation of small bowel floating around in a moderate amount of peritoneal fluid. No definite persistent displacement of the upper gastro-intestinal tract by an extrinsic mass is visualized but the small bowel pattern at times suggests a partially obstructive process, on a paralytic basis, and very likely related to peritonitis.

Course in Hospital: On 7-11-52, the day following admission, the patient had a barium enema which showed a normal colon. The appendix was visualized in the right lower quadrant in the usual position. X-ray of chest showed peribronchial pneumonitis involving the base of the left lower lobe associated

with pleuritis. During her hospital stay, the patient complained of severe pain in lower chest area and a sharp, tight pain around her heart. She perspired a great deal and her face was quite flushed. Off and on she complained of much gas and abdominal discomfort in the left upper quadrant. The patient has been very nervous and tense by spells. On 7-14-52, she had a B.M.R. of plus 22.5, at which time she was restless and apprehensive, but coöperative.

On 7-18-52 a thoracentesis was performed and specimen was sent to the laboratory. Smear: no bacteria seen. Culture: no growth. A paracentesis was performed the following day and the specimen was sent to the laboratory. Pleural fluid for cell block was reported as Class I, negative. Peritoneal fluid was reported as Class I, negative. Both fluids showed no growth on culture and no tubercle bacilli on smears.

The patient refused operation at this time and was discharged on 7-19-52, her ninth hospital day.

The patient was readmitted to the Eastern Maine General Hospital on 8-1-52, because of increasing abdominal distention, pain, and dyspnea. Since discharge from the hospital on 7-19-52 she had noted a marked increase in the size of her abdomen with increasing dyspnea. She has had intermittent generalized abdominal pain associated with nausea, but no vomiting. There has been associated fever without chills.

Physical Examination: T-100.4° F.; P-120; R-24; B.P. 120/60. Physical examination revealed a well-developed, well-nourished white female of apparent stated age in obvious distress. Physical findings were limited to the chest and abdomen. There was marked dyspnea. There was dullness to percussion over the left lower lobe posteriorly with absent breath sounds. There were a few moist rales at the right base. The upper lung fields were clear. There was marked abdominal distention with dullness to percussion in both right and left lower quadrants. There was a definite fluid wave elicited. Peristalsis was present without any high pitched tinkle. There was generalized tenderness which was most marked over the whole right side of the abdomen with rebound tenderness. Bimanual pelvic examination was unsatisfactory due to abdominal distention. Blood: Hb. 10.8 gm.; WBC 17,450; Neutro. 52; Eosino. 1; Bands 27; Meta. 1; Lymph. 15; NPN 28. The patient was hydrated and the following morning an exploratory laparotomy was performed.

DISCUSSION

Dr. Kellogg: With the signs of peritoneal irritation and high leukocyte count indicating an acute surgical condition, proper judgment was used and decision to operate was made. Determination of the exact nature of the condition prior to operation is somewhat academic. On her second admission on

August 1, 1952, she had increasing abdominal distention, pain and dyspnea. These symptoms had been building up since she left the hospital on July 19, a 11-12 day period. She had abdominal pain accompanied by nausea but no vomiting. There are a few questions I would like to ask. Her pleural fluid for cell block was reported as Class I, negative. Was this a Papanicolaou smear? Were cultures and smears for tubercle bacilli done on these fluids?

Dr. Wadsworth: The cell block on the pleural fluid was negative. Both cell blocks and Papanicolaou smears were negative for cancer cells on the peritoneal fluid. Smears were negative for tubercle bacilli on both pleural and ascitic fluids. Bacterial cultures showed no growth.

Dr. Kellogg: What about her menstrual history?

Dr. Albro: She has had a normal menstrual history, with catamenia at 12 years, every 28 days and a three day flow. Her last period in June was normal. She has 3 or 4 children.

Dr. Kellogg: From the G. I. series and intravenous pyelogram, I have been unable to obtain much help. I shall discuss the differential diagnosis by groups. Let us first consider infectious disease or suppurative conditions caused by bacteria with a focus of infection in the internal reproductive organs such as endometritis or pyosalpinx. Her history is not suggestive of attempted abortion on the part of the patient. That seems to be ruled out by the history. There was a negative gall bladder series. The intravenous pyelogram shows no obstructive uropathy. Urinalysis has been negative except for a few white cells in the sediment. We can apparently rule out infection in the G. I. tract. The gall bladder and urinary tract can be excluded. The G. I. series is not particularly helpful. One possibility might be recurrent appendicitis with appendiceal abscess to account for the tenderness in the right lower quadrant. I am against it as there is no mass and the lumen of the appendix was visualized by barium enema six months after the onset of abdominal pain. If an abscess were present the appendix would have sloughed by this time. Diverticulitis with peritonitis is excluded by the normal barium enema. Pylephlebitis with splenomegaly and hepatomegaly is not a good possibility in the absence of some indication of a primary suppurative lesion such as acute appendicitis. There should be some indication of a previous inflammatory condition to have initiated the phlebitis. One possible diagnosis could be tuberculous peritonitis with the focus of infection in the genital tract. Tuberculous peritonitis may lead to ascites and pleural effusion. On the last X-ray film, pleural effusion was shown in both pleural cavities. No tubercle bacilli were found in the chest fluid or ascitic fluid.

Could it be an intrinsic small bowel lesion? There is nothing to suggest intestinal obstruction although

the patient was distended and dull to percussion in the right and left lower quadrants. Peristalsis was present which is against paralytic ileus. Perhaps some obstructive lesion such as neoplasm, intussusception or volvulus should be more definitely considered but there is insufficient evidence to go on.

One form of neoplasm commonly causing ascites is ovarian carcinoma. The pelvic mass could be ovary or uterus. Ascites might even be associated with a cancer of the gastro-intestinal tract or with cancer of the tail of the pancreas. Ascites, fever and abdominal pain could be caused by one of the lymphomata, abdominal Hodgkin's disease or reticulum cell sarcoma.

The Collagen diseases must be considered when there is a long history of pain and fever. She might have periarteritis nodosa or lupus erythematosus. Polyserositis should be mentioned. There is much to be said for this diagnosis. Accumulation of fluid in the abdominal and pleural cavities, fever and abdominal pain go with this syndrome. We would have to have the pathological findings to make this diagnosis. Cirrhosis of the liver is a distinct possibility. Any patient in this age group with ascites and abdominal pain should be considered as possibly having cirrhosis of the liver with its complications of perihepatitis, perisplenitis and peritonitis.

In summary, we have a 38-year-old woman who over a long period of time has had gradual development of abdominal symptoms, abnormal physical findings, elevated temperature and a marked leukocytosis. The decision to explore her was made. Without sufficient evidence to establish a conclusive diagnosis, I should like to make tuberculous peritonitis and pleural effusion my first choice and malignant lymphoma the second.

Dr. Cutler: What kind of ovarian tumor did you have in mind when you mentioned that possibility?

Dr. Kellogg: Papillary cystadenocarcinoma of the ovary.

Dr. Cutler: Did you consider Meigs' syndrome (benign ovarian tumor with ascites and hydrothorax)? I think it would explain her whole picture.

Dr. Curran: When you spoke of cancer of the bowel, perhaps you considered a Krukenberg tumor, i.e., carcinoma of the gastro-intestinal tract with metastasis to the ovary.

Dr. W. Adams: In the G. I. series, both films show the small bowel bunched together in a small mass. Was this explained on the basis of infection?

Dr. Albro: The displacement of the small bowel was not persistent. It was thought to be floating in the ascitic fluid.

Dr. Warren: With no evidence of cachexia and weight loss, I would be against carcinomatosis.

Dr. Fellows: This is a rather interesting story. Obviously the patient went down hill quite rapidly after six months of increasing symptoms. I would place lymphoma as my first diagnosis.

Dr. W. Adams: Was the tenderness in the right side constant?

Dr. Albro: No, it was not constant.

Dr. W. Adams: There is some right ascending colon dilatation which might account for the tenderness.

Dr. Wadsworth: Dr. Clark, do you feel that we can rule out pathology of the genito-urinary tract as a possible cause of this patient's difficulties?

Dr. Clark: Abdominal pain, recurrent fever, leukocytosis and pleural effusion suggest perinephric abscess. Was there any scoliosis?

Dr. Albro: No, it was not demonstrated on any of the films.

Dr. Clark: There may be pleural effusion with perinephric abscess but I have never seen ascites with perinephric abscess.

Dr. DeWitt: With large densities in the pelvis and medial displacement of the kidneys, a retroperitoneal lymphoma seems like a good possibility. The leukocytosis would fit into this diagnosis.

Dr. Wadsworth: Dr. Albro, will you tell us what was found at operation?

Dr. Albro: Our pre-operative diagnosis was Meigs' syndrome. We aspirated 3500 c.c. of clear, straw-colored fluid. There was a large cystic ovarian tumor on the left, approximately the size of a small grapefruit, measuring 9.2 x 6.4 x 5.4 cms. A larger ovarian tumor on the right measured 21.0 x 14.5 x 8.0 cms. It contained a purulent type of material which might account for the fever. There were firm nodules protruding from the surfaces of both ovaries and there was an extension of small grayish nodules scattered over the pelvic peritoneum. A total hysterectomy did not appear to be indicated in the presence of peritoneal metastasis, although no tumor was found in the liver or lymph nodes. A bilateral salpingo-oophorectomy was performed.

Dr. Wadsworth: Both ovaries contained multiloculated cysts and both contained pseudomucinous material. The right ovary had areas of necrosis with material resembling a purulent exudate. Microscopic sections of both ovaries showed a similar histologic structure. There was marked epithelial hyperplasia with moderate invasion of the stroma. The interlocular stroma is largely replaced by neoplastic epithelium. Numerous mitotic figures are present. The epithelium lining the cysts does not resemble that seen in the benign type of pseudomucinous cystadenoma, but is much more anaplastic with a heaping

up of the nuclei in these cells and a definite loss of polarity.

Dr. Albro: There is some question as to whether our pre-operative diagnosis was correct or incorrect. I have read some of the literature on Meigs' syndrome and there seems to be a disagreement as to what should be included in this category. A case of bilateral ovarian fibroma with left pleural effusion was described by Callingsworth in 1879. It wasn't until 1937 that Meigs and Tass reported four cases of fibroma of the ovary with ascites and hydrothorax. Removal of fibroma brought about complete cure. Dr. Meigs has emphasized that even though a case seems apparently hopeless because of ascites and pleural effusion which suggest metastasis, the patient should have surgical exploration as it may be a benign fibroma. Although numerous articles on Meigs' syndrome have included cases of carcinoma of the ovary with ascites and pleural effusion, Dr. Meigs has not been willing to accept such cases as falling in this category. He states, in 1947, "I do not think that a papillary tumor or any kind not of a solid variety should be considered" as Meigs' syndrome. In 1951, however, Nelson and Dennison in the *Annals of Internal Medicine*, maintain that "it appears desirable to broaden the term 'Meigs' syndrome' to include all cases of pelvic tumor, benign or malignant, solid or cystic, with ascites alone, hydrothorax chiefly, or both, in whom no ostensible explanation, such as metastasis, can be found for these accumulations of fluid." If we follow the concept of Meigs, however, this case should not be considered as an example of Meigs' syndrome. Although fluid was negative for malignant cells on all cell blocks, if enough fluid had been obtained it might

have shown the ascites and pleural effusion to have been on the basis of carcinoma. The term should probably be limited to those cases in which the fluid results from the presence of a benign tumor.

Dr. Warren: How does the fluid get from abdominal to thoracic cavities?

Dr. Albro: Meigs put carbon particles in the abdominal cavity and they were recovered in the pleural cavity. It has been suggested that the fluid passes through the lymphatics of the diaphragm but the exact explanation of this is not clear.

Dr. Cutler: What is the present status of the patient?

Dr. Albro: The patient is receiving large doses of X-ray. I don't know her prognosis. She is comfortable now and feels well. Her dyspnea has completely cleared after removal of the fluid. The hydrothorax has completely disappeared.

Dr. Curran: Is she getting testosterone?

Dr. Albro: No, but it may be indicated later as a palliative measure.

Dr. W. Adams: What would account for her normal menstrual history?

Dr. Albro: I cannot account for it unless there was enough normal ovarian tissue to produce the necessary amount of hormones.

Dr. Wadsworth: One important thing accomplished by Meigs is to point out the fact that some patients who appear to have malignant disease may, by surgery, prove to have benign lesions which may be removed and result in a complete cure of the patient.

CENTENNIAL NEWS

Officers Elected at First Annual Meeting, June 1, 1853

(The following is from the Transactions of the Maine Medical Association, Vols. 1-2)

"Voted, To raise a committee of five to nominate a Board of Officers for the ensuing year.

"Drs. Briggs, Fuller, Daveis, P. Barton and Bradbury were appointed, and reported the names of the following gentlemen, who were chosen officers for the current year:

President, Dr. James McKeen, Topsham.

Vice-Presidents, John T. Gilman, Portland.

N. P. Monroe, Belfast.

Treasurer, H. H. Hill, Augusta.

Recording Secretary, N. R. Boutelle, Waterville.

Corresponding Secretary, T. G. Stockbridge, Bath.

"Dr. James McKeen, from the Committee on Medical Ethics, stated that they had been unable to prepare such a report as it was desirable to present to the Association."

EDITORIALS

An Old Therapeutic Friend

The JOURNAL is pleased to publish this month a review of the behavior of an Old Friend. In this period of amazing announcements about new drugs, it is a little consoling to find that a sturdy old timer of 175 years or more serves so well. The story of Dr. William Withering and the old grandame of Shropshire who told him that fox glove was good for the dropsy is known by every medical student.

How many, however, remember the many accomplishments of the talented Withering, 1741-1799. He was a native of Shropshire and a graduate of the University of Edinburgh in 1766. And a young man who was not too proud to listen to the startling accounts that the old lady poured forth about fox glove. Withering was, indeed, a versatile gentleman. He had a large and lucrative practice in Birmingham. He was one of the greatest of medical Botanists and published in 1776 his masterpiece, "Botanical Arrangement of all the Vegetables." In 1771 and 1778, he published articles on the epidemics of Scarlatina

and Scarlatinal sore throat and in 1773 recommended an admirable modern treatment for phthisis. His "Account of the Fox Glove" in 1785, a pharmacological classic was, incidentally, a protest against the abuses of digitalis, which was already creeping in. Human nature in the cloak of the modern and well trained doctor seems to react about the same as it did 200 years ago. And occasionally one wonders if we appreciate the clinicians of the middle 18th century who made so many valuable and lasting contributions to the practice of medicine. During his busy years, Withering found time to study the effect of climate on diseases, to breed fine dogs and cattle and in his leisure hours solace himself with the flute and harpsichord. He was a gentleman and a scholar.

It seems rather comforting to read again about digitalis and to reflect with respect upon the accomplishments of our honorable forebears in the profession.

A Resume of Special Features Published in 1952

Because we hear many remarks to the effect that Association members do not read the JOURNAL, we are going to devote this space to a resumé of a portion of the past eleven issues. The principle reason for this resumé is that we have endeavored to give you pertinent information, in the pages of the JOURNAL, relative to the affairs of your Association, and hope to prompt you to give future issues your close attention.

Now to get on with the subject. In January, we published complete information relative to National, State and County dues, which included deadline date for payment, where and to whom checks should be sent, and information about members eligible for exemption. In this same issue there was a letter from the Veterans' Administration Center in Togus which gave the correct procedure for making out Prescriptions for Veterans.

The February issue brought you the first item about the Centennial Celebration in June, 1953, which is to be held in Portland, June 21-24, and for which extensive plans are in the making.

In March a report of a meeting in Chicago "to review the progress and outline continuing plans" for the American Medical Education Foundation was featured — as well as a list of Out of State Speakers for the June, 1952, annual session. This issue also

contained a reminder notice about Dues; a repeat of some of the information published in January.

Suggested Amendments to the Constitution and By-Laws, which were acted upon at the June meeting, were published in April and May. And, in May "The President's Page" gave more information about the American Medical Education Foundation. The Program in Brief for the June meeting was published in May and the complete Program in June. Councilor and Committee reports were published in June and July — and the Association's Roster, including County and Alphabetical listing, in June. The July issue also contained a write-up about your President, Dr. Drake, your President-elect, Dr. Nickerson, your two new Councilors, Drs. Larson and Albert, a list of Standing and Special Committee Members, as well as the report of the Secretary-Treasurer and Auditor.

A summary of the summer meeting of the Council appeared in the August issue, which also contained the Executive Secretary's report.

The report of your Delegate to the American Medical Association, Dr. Vickers, and reports of Delegates to annual meetings of the New England Medical Societies were published in September. These reports are interesting and instructive.

A report of a meeting of the Editorial Board, which outlines future plans for the JOURNAL, and of

an A. M. A. meeting on Public Relations are featured in the October issue.

A "Letter From the President and Chairman Medical Advisory Committee to the Members Regarding Malpractice Insurance and Rates Therefor," which appears as a two-page spread in November is of particular importance to every member. Have you read it?

Space does not permit covering all the material published in eleven issues of the JOURNAL, i.e., Scientific Articles, The President's Message, Progress Reports on Annual Meetings (which will appear monthly from now until June), County Society Notes, Changes in Membership, Special Notices, and

beginning with the October issue a list of Coming Meetings. Nor does space allow us to give you detailed information about that portion of the JOURNAL covered in our resumé. Our purpose, however, is to call to your attention some of the "Special Features" which appear each month under one heading or another, and contain information of value to every member.

New Year's resolutions may be somewhat "passe" but if you were to resume this custom, we feel that first on your list should be to "read THE JOURNAL OF THE MAINE MEDICAL ASSOCIATION as soon as it appears on my desk."

Progress Report of the Committee for the Centennial Celebration

The Committee is pleased at this time to be able to announce definite progress in the planning of the Centennial Celebration to be held next June 21-24. It is hoped that the caliber of the program will be commensurate with the importance of the occasion.

The celebration is designed to mark and to stress the accomplishments and services of the State of Maine general practitioner of the present and of the recent and remote past. Not only will the general practitioner receive the honor due him but the general public will have a good opportunity to learn what effort has been made to supply good medical care and counsel.

Registration will take place at the Eastland Hotel, which will serve as headquarters for this event. On Monday, Tuesday and Wednesday afternoons a group of distinguished speakers will present interesting papers. The presentations will be made by such outstanding men as James L. Wilson, M. D., Cornelius P. Rhoads, M. D., Chester M. Jones, M. D., George W. Holmes, M. D., Admiral Arthur H. Dearing, M. C., U. S. N., Harris P. Mosher, M. D., and Clyde L. Deming, M. D.

On Tuesday and Wednesday mornings clinical case presentations will be made at the Maine General Hospital, Maine Eye and Ear Infirmary and Mercy Hospital. The cases will be presented by men from all parts of the State, and will include general practice cases and others of particular medical and surgical and subspecialty interest. A clinical pathological session will be held at the Mercy and Maine

General Hospitals, the discussers being chosen from our list of distinguished guest speakers.

In addition to the usual Technical Exhibits, plans have been made to have scientific and historical exhibits to inform the visiting members and their guests of the accomplishments and interests of the past and the ambitions and research of the present. It is hoped that the Woman's Auxiliary will aid in the Historical Exhibits, both in obtaining historical data and in presenting their findings.

Current plans call for some unusually interesting entertainment on Sunday, Monday and Tuesday evenings. The Annual Banquet will be held Wednesday evening.

The annual Golf Tournament will, of course, be held, probably at Portland Country Club.

In order to make it possible for all members to give their undivided time and attention to their Centennial Celebration, requests have been made that sectional meetings, as of the Maine Heart Association and Medico-Legal Society, be held at some dates other than June 21st through June 24th.

To keep you in touch with plans for the Centennial Celebration, the Committee will have a "Progress Report" in each issue of the JOURNAL from now until June. These reports will contain names of additional speakers, plans for entertainment, and other pertinent information. Don't miss them.

C. LAWRENCE HOLT, M. D.,
Chairman,
For the Centennial Committee.

1953 Dues

A. M. A. — State — County

January 1, 1953, is dues time again.

State and County Dues: Bills for your State and County dues are mailed from your County Secretary's office and check covering same should be sent direct

to him. He will then deduct your county dues and send a check covering State dues to the Maine Medical Association's office. Deadline date for payment

Continued on page 394

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* Block, L. H.: Management of Constipation with a Refined Psyllium Mucilloid Combined with Dextrose, *Am. J. Digest. Dis.* 14:64 (Feb.) 1947.

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Secretary, C. W. Kinghorn, M. D., Kittery

COUNTY SOCIETY NOTES

Androscoggin

Dr. Ward J. Renwick of Auburn, is spending the winter months at the Colonial Hotel, St. Petersburg, Florida.

Franklin

Dr. Richard S. Hawkes of Portland, Maine, was guest speaker at a meeting of the Franklin County Medical Society, Monday evening, November 10, 1952. His subject was The Use of ACTH and Cortisone.

There were thirteen members and three guests present.

PAUL E. FLOYD, M. D.,
Secretary.

Hancock

A regular meeting of the Hancock County Medical Society was held at the Hancock House, Ellsworth, Maine, November 12, 1952. The following members were present: Drs. James H. Crowe, Philip L. Gray, Arthur M. Joost, Jr., Harry Kopfmann, Charles F. Larrabee, Edward Thegen and Mason Trowbridge.

Dr. Andrew Fergus of Bangor, presented an interesting talk on "Psychiatric Problems in General Practice," which was followed by a question and answer period.

ARTHUR M. JOOST, JR., M. D.,
Secretary.

Kennebec

A regular monthly meeting of the Kennebec County Medical Association was held at the Elmwood Hotel, Waterville, Maine, October 16, 1952. There were forty-four members and guests present at the dinner.

Dr. Francis H. Sleeper, President, presided at the business meeting. He appointed the following members to draw up resolutions on the death of Dr. Harry Elkins; Dr. Lee Richards, Chairman; Dr. Charles E. Towne and Dr. Matthias Marquardt.

He called attention to the Fall Clinical Session of the Maine Medical Association, to be held in Waterville, October 26 and 27.

W. Mayo Payson, Executive Secretary of the Maine Medical Association and Mrs. Esther Kennard, Secretary-Treasurer, were called on by Dr. Sleeper and spoke briefly of the association and the coming clinical session.

Dr. Sleeper called on Dr. Charles Towne, who brought up the matter he had moved to table at the last meeting, namely the consideration of a resolution endorsing the principle of fluoridation of community water supplies; a lengthy discussion ensued by Drs. Kagan (against), and Fisher, Garcelon (D. D. S.) et al.; which was interesting and informative. However, due to lack of time the discussion had to cease without coming to motion.

Dr. Wyland F. Leadbetter of Boston, guest speaker, was introduced by Dr. Harold E. Small. Dr. Leadbetter's subject was "Office Urologic Practice." He discussed the work as applied to male and female; much of which can be done in the office by the physician in general practice. His discussion was clear and interesting, and proved to be one of the best presentations we have had on urology.

A. H. MORRELL, M. D.,
Secretary.

Knox

Dr. Gale of the New England Center Hospital, Boston, was guest speaker at a meeting of the Knox County Medical Society on Tuesday, November 18, 1952, at the Copper Kettle, Rockland, Maine.

York

A regular meeting of the York County Medical Society was held at Warren's Lobster House, Kittery, Maine, November 12, 1952.

A social hour from 12.30 to 1.30 P. M., was followed by a fine dinner of steak and lobster.

As the President and Vice President were not present, the Secretary appointed Dr. Carl E. Richards of Sanford to preside, which he did in a very creditable manner.

Dr. Thomas A. Foster and Dr. Alice A. S. Whittier, both of Portland, talked on Child and Maternal Welfare.

Dr. Eugene H. Drake, President of the Maine Medical Association, outlined plans for the Centennial Observance of the State Association to be held in Portland in June, 1953.

Dr. James H. Macdonald of Kennebunk, was appointed to make arrangements for the January, 1953, meeting, which will be held at the Kennebunk Inn.

The following members were appointed to serve on the Nominating Committee; Drs. Robert D. Vachon, Melvin Bacon and Edward W. Holland.

There were eleven members and nine guests present.

C. W. KINGHORN, M. D.,
Secretary.

Transfer of Membership

Ernest Eppinger, M. D., 52 Belmont Street, Portland.

From: York County Medical Society.

To: Cumberland County Medical Society.

Change of Address

Aroostook

John R. Merrick, M. D.

From: 18 Sweden Street, Caribou, Maine.

To: 1 Park Avenue Terrace, Bronxville, N. Y.

Cumberland

Robert W. Agan, M. D.

From: 22 Arsenal Street, Portland, Maine.

To: 44 Stonybrook Road, Cape Elizabeth.

Penobscot

Arthur N. Lieberman, M. D.

From: 209 State Street, Bangor, Maine.

To: 180 Broadway, Bangor, Maine.

York

Robert B. Stewart, M. D.

From: Cornish, Maine

To: York Village, Maine.

Members in Military Service

Robert W. Agan, M. D., Cumberland County Medical Society.

Robert B. Stewart, M. D., York County Medical Society.

NECROLOGY

Lester Francis Norris, M. D.

1884 - 1952

Lester Francis Norris, M. D., well-known, highly-respected Madison physician, will be greatly missed by his townspeople and particularly by the school children to whom he gave much of his time.

Dr. Norris was born in Brockton, Massachusetts, July 15, 1884, the son of William Wallace Norris and Elmina Frances Bates Norris, and deceased in Madison, Maine, on October 30, 1952.

He was educated in the public schools of Brockton, Massachusetts, was graduated from Williston Seminary, Easthampton, Massachusetts, in 1907 and from the College of Physicians and Surgeons, Baltimore, Maryland, in 1912. He was married to Myrada S. Cone, December 29, 1915, at Taunton, Massachusetts, by whom he is survived with one son, Perry R. Norris, and sister, Emma Norris of Brockton, Massachusetts.

Dr. Norris held the position of Assistant Physician at Taunton State Hospital one year, Assistant Superintendent of Bangor State Hospital eight years, House Physician at Central Maine General Hospital, Lewiston, one year and was State Psychiatrist to the Women's Reformatory, Skowhegan, for many years.

From 1922 until his death he practiced medicine in Madison, Maine, where he was school physician for many years and school football physician since 1923.

Dr. Norris was a member of the Somerset County Medical Society and the Maine Medical Association, a member of the Madison Congregational Church, the Masons (Blue Lodge), Odd Fellows, Past Commander, K. P., and Past Noble Grand, and Past President of the Madison Kiwanis Club.

COMING MEETINGS

Maine Medical Association Centennial Session, Eastland Hotel, Portland, Maine, June 21-24, 1953. Chairman Centennial Committee, Dr. C. Lawrence Holt, Portland. See "Progress Report of the Committee for the Centennial Celebration," which is published elsewhere in this issue of the JOURNAL.

American Medical Association Annual Session, New York City, June 1-5. Secretary, Dr. George L. Lull, 535 North Dearborn St., Chicago 10, Ill.

Annual Congress on Industrial Health, Drake Hotel, Chicago, January 21-22, 1953. Secretary, Dr. Carl M. Peterson, 535 North Dearborn St., Chicago 10, Ill.

American Laryngological, Rhinological and Otological Society—Eastern Section, Hotel Syracuse, Syracuse, N. Y., January 7, 1953. Chairman, Dr. Francis W. Davison, Danville, Pa.

American College of Surgeons, The Netherlands Plaza Hotel, Cincinnati, Ohio, January 19-21, 1953. Chairman, Dr. M. M. Zininger, Cincinnati General Hospital, Cincinnati 29.

An impressive program of symposia, panel discussions, clinical conferences and medical motion pictures on practical surgical problems will open the 1953 season of Sectional Meetings of the American College of Surgeons. This meeting is the first of eight scheduled for various parts of North and South America during the coming year, including a meeting in Boston, Massachusetts, March 2-5, 1953.

Annual Congress on Medical Education and Licensure, Red Lacquer Room, Palmer House, Chicago, Illinois, February 9-10, 1953. The annual Congress on Medical Education and Licensure is conducted under the auspices of the Council on Medical Education and Hospitals of the American Medical Association and the Federation of State Medical Boards of the United States. In addition, the following open meeting will be held at the Palmer House immediately preceding the Annual Congress on Medical Education and Licensure: Sunday, February 8, 1953, 9.00 A. M. to 12.30 P. M. — Open Meeting of the Advisory Board for Medical Specialties.

NEWS AND NOTES

Medical Motion Pictures

The Committee on Medical Motion Pictures of the A. M. A. has announced the publication of a new revised film list which includes 78 medical films not readily available from other sources.

This list will be available for distribution after December 1, 1952. A copy may be obtained by writing the Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

Mental Health Clinic Schedule

The Division of Mental Health offers psychiatric clinic service to children and adults in the following cities:

Portland — Health and Welfare Department, 178 Middle Street. Every Tuesday.

Lewiston — Out-Patient Department, Central Maine General Hospital. Every Monday.

Augusta — Bureau of Health, Division of Mental Health. By Appointment.

Waterville — Mansfield Clinic, Thayer Hospital. 3rd Wednesday.

Bangor — Out-Patient Department, Eastern Maine General Hospital. 1st Wednesday afternoon.

Valentine School, Union Street. 1st Thursday.

A traveling clinic visits the following towns and cities at irregular intervals: Caribou, Houlton, Lincoln, Machias, Rockland and Rumford. The Portland Clinic is open daily with a staff of 1 psychiatric social worker and 1 psychologist. The psychiatrist is in attendance on Tuesdays. The other clinics are staffed by a psychiatrist and a psychologist.

Referrals may be made by private physicians, parents, families, school agencies, school superintendents, Department of Education, all divisions within the Department of Health and Welfare. Application blanks may be obtained from the main office of the Division of Mental Health — State House, Augusta.

Patients are seen by appointment only. Each child must be accompanied by a parent or guardian. Applications should be sent to the Director, Division of Mental Health, Department of Health and Welfare, State House, Augusta.



ROUGH HANDS FROM TOO MUCH SCRUBBING?

Soothe rough, dry skin with AR-EX Chap Cream. Contains healing ingredient, carbonyl diamide. Aids severely chapped and broken skin. Pleasant to use. Scented or Unscented. Send for sample.

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Venereal Disease Clinics

The Department of Health and Welfare, Bureau of Health, maintains facilities for the diagnosis and treatment of venereal diseases in the following locations:

Augusta, Bangor, Bath, Belfast, Biddeford,
Lewiston, Portland, Rockland, Rumford,
Sanford, Waterville, Wilton and Winthrop.

Any physician wishing to refer an indigent person for diagnosis or treatment may obtain the name of the nearest clinic physician by contacting the Department of Health and Welfare, Bureau of Health, State House, Augusta, Maine. If no clinic facilities are available, physicians will be authorized to treat indigent patients in their offices. Authorization should be requested before treatment is started.

BOOK REVIEW

"BRAIN SURGEON"

The Autobiography of Dr. William Sharp

Published by the Viking Press

September, 1952

This book is another of the many recent examples of the medical man writing on medical and surgical problems in a popular vein for lay consumption. This time the book happens to be an autobiographical discussion and life story of a neurological surgeon. Dr. Sharp writes well and holds the interest of his readers. To those of us dealing with neurosurgical problems from day to day, the drama of Dr. Sharp's neurosurgical experiences tends to make us a little self-conscious and embarrassed but I suppose this is a necessary and forgivable literary privilege. I am sure that very few of the modern active neurological surgeons would agree with many of Dr. Sharp's theories and principles about neurosurgical therapy. The value of decompressive operations, and his insistence upon almost one hundred per cent cause and effect between intracranial bleeding and cerebral spasticity are certainly not entirely tenable with modern neurosurgical opinion. However, he has certainly emphasized some points that those of us who might be considered perhaps more orthodox neurosurgeons, should seriously contemplate. One gets the impression while reading this book of a certain amount of justifiable egotism, and one is just a little suspicious that Dr. Sharp's great drama of humanity is more paternalistic than altruistic.

The book is well-written and certainly holds one's attention in spite of the fact that it unquestionably will give the layman an unjustifiable aura to the "Brain Surgeon." Although the book holds one's interest, the reviewer must admit that there are few of the neurosurgical opinions with which he agrees and also the reviewer is at odds, at least to a limited extent, with the medical philosophy behind Dr. Sharp's autobiography.

GEORGE L. MALTBY, M. D.

Advertisement



From where I sit
by Joe Marsh

Left Ham Sandwich, 40¢

Ambled over to Bob's Restaurant Tuesday for lunch and noticed a new sign "Left Ham Sandwich, 40¢ . . . Right Ham Sandwich, 30¢."

"Why the sign, Bob?" I asked. "Don't tell me you believe hogs scratch more with their right leg than with their left—so that the left ham is more tender?"

"No," he says. "I don't take any stock in it. But, some people have ordered those 'left' sandwiches. When I explain to them that there's nothing to that fable, that the sign is just a business-getter, and I've only one price, they enjoy a regular, old-fashioned, plain ham sandwich all the more!"

From where I sit, stories like "right" hams being tougher than "left" ones are with us because some people get ideas and hang onto them for dear life. It's like those people who would interfere with a man practicing his profession or those who would deny me a glass of beer. I say let's keep our opinions free from being "sandwiched-in" by misinformation.

Joe Marsh

1953 Dues—Continued from page 388

of these dues is April 1st. According to the By-Laws, "Any member whose name has not been reported for enrollment and whose dues for the current year have not been remitted to the Secretary of this Association (M. M. A.) on or before April 1st, shall stand suspended until his name is properly reported and his dues for the current year properly remitted."

American Medical Association Dues: Bills for A. M. A. dues are sent from the State Association's office and your check should be made payable to the Maine Medical Association and sent to 142 High Street, Portland 3, Maine. Your A. M. A. dues include subscription to *The Journal of the American Medical Association*, or you may substitute one of the special journals published by A. M. A. for THE JOURNAL. An active member is delinquent if his dues are not paid by June 1 of the year for which dues are prescribed and shall forfeit his active membership in A. M. A. if he fails to pay the delinquent dues within thirty days after notice of his delinquency has been mailed by the Secretary of the American Medical Association to his last known address.

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HOSPITAL STAFF MEETINGS**Open to the Profession**

CITY	HOSPITAL	DATE
Augusta	Augusta General Hospital	1st Wednesday
Bangor	Eastern Maine General	2nd Tuesday
Bath	Bath Memorial Hospital	1st Tuesday
Belfast	Waldo County	2nd Friday
Biddeford	Webber Hospital	2nd Thursday
	Notre Dame Hospital	2nd Monday
Boothbay Harbor	St. Andrew's Hospital	4th Tuesday
Caribou	Cary Memorial	1st Wednesday
Damariscotta	Miles Memorial	2nd Thursday
Farmington	Franklin County Memorial	2nd Monday
Greenville	Charles Dean Hospital	2nd Wednesday
Hartland	Scott Webb Memorial Hospital	1st Wednesday
Lewiston	Central Maine General	2nd Thursday
	St. Mary's General	2nd Monday
Portland	Maine Eye and Ear Infirmary	1st Tuesday
	Maine General	2nd Friday
	Mercy	4th Thursday
Presque Isle	Presque Isle General	1st and 3rd Tuesdays
Rockland	Knox County General	1st Monday
Rumford	Rumford Community	4th Wednesday
Sanford	Goodall Memorial	2nd Tuesday
Waterville	Sisters	2nd Tuesday
	Thayer	Every Thursday

The above list was compiled from a questionnaire sent out by the Maine Hospital Association. Additions or corrections will be made on notification to the Secretary, Maine Hospital Association, Thayer Hospital, Waterville.

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THE JOURNAL
of the
MAINE MEDICAL ASSOCIATION



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Anesthetic in Hospital	10.00	20.00	30.00	40.00
X-Ray in Hospital	10.00	20.00	30.00	40.00
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